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The New Year's Honours

SOME prominent personalities in transport and industry are included in the Queen's first New Year's Honours List. Sir Clive Baillieu, Chairman of the Dunlop Rubber Co. Ltd., and a number of other well known companies and a former President of the Federation of British Industries receives a barony, Lord Brabazon of Tara, one-time Minister of Transport and an outstanding figure in aviation and road transport circles gets a G.B.E. Among those who receive the K.B.E. is Sir Robert Gould, Chief Industrial Commissioner at the Ministry of Labour, who has included transport problems among his many activities in recent years. The C.M.G. awarded to Mr. H. Somerville Smith recognises the value of the services he has performed as Comptroller-General of the Export Credits Guarantee Department. Of more direct railway interest are the knighthood conferred on Mr. John Benstead, the Deputy-Chairman of the British Transport Commission and a former railway employee, and the bestowal of the C.V.O. on Mr. S. W. Smart, the popular Superintendent of Operation, Southern Region, British Railways, who has spent fifty years in railway service, and on Mr. H. A. Cruse, Director & General Works Manager of the Westinghouse Brake & Signal Co. Ltd. The work of a number of other manufacturing enterprises whose products are well known in transport circles at home and overseas is also given some

recognition by awards to executives and others, as will be seen from a first selection from the list given on another page in this issue. A further selection will be published in a subsequent issue, when any awards to overseas personnel will be available.

Coronation Year Outlook

A PERIOD of national ceremonial and rejoicing is always a testing time for public services. In transport, this is a result not only of the volume of traffic to be handled, but of quickened public interest and a possible tendency to criticism heightened by considerations of national prestige. The pending application for higher passenger fares will not assist in promoting an attitude of tolerance; it was a death's head at many Christmas feasts, and travellers burdened by after-holiday sensations returned to work glumly reading newspapers in which half-page advertisements told of cheaper travel and new amenities for those who fly the Atlantic. The aim of the railways therefore must be to see that toleration is not needed but admiration is earned. Fortunately there is every sign that in all ranks of the railway service the advice has been taken to heart that doubts over future railway organisation or individual political predilections should not be allowed to influence the attitude to the daily work which flows on regardless of outside events. There is some hope this year of better steel allocations for railways, based on rising production figures, and whatever structural upheavals may be caused by the Transport Bill, the measure does at least contain the promise of freedom from restrictions that have long been a source of complaint.

Collaboration with Railway Zoning Procedure

AN example of maximum benefit being gained from a goods forwarding system by a trader planning his own procedure to conform with its principles, was quoted by Mr. T. J. D. Morris of Chiswick Products Limited in a recent paper on "Some Problems of a Transport Manager" to the Railway Students' Association. The author, describing his own organisation's procedure, paid a tribute to the usefulness of the all-Region zonal loading guide issued by the Railway Executive. They had adopted a system of including a code on every Addressograph plate which enabled their staff to determine at once the appropriate sub-railhead, railhead, or zonal centre in accordance with the tonnage of traffic offering. Goods were assembled in truck loads, of a minimum of 1 ton per truck. Preparation of the system had been an immense task, but had borne fruit, and the system was appreciated by the railway loading staff. Previous arrangements were made with the railway for reception of goods and provision of wagons. The liaison established by these methods enabled the working of the system to be regarded in the same light as a private siding with a slightly extended haul from warehouse to wagon.

Classification Yards in Canada

BECAUSE of the increased traffic resulting from the rapid economic expansion of Canada, the railways have to cope with the feasibility of enlarging existing classification yards or siting and building new yards. Mr. G. H. Hoganson, Research Engineer of the Canadian National Railways, in an address to the Montreal branch of the Engineering Institute of Canada, described the yards as "manufacturing plants" whose basic function was to receive wagons in an unclassified or "raw" state, and then group them by destination, route and commodity or traffic requirements. The present-day demand for faster freight service at relatively low cost had made modern classification yards important supplementary units to major freight terminals. Statistics showed that 89 per cent of the life of a wagon in Canada was spent in yards or terminals and it appeared that the answer to improving service lay in the expeditious handling of wagons through the yards. Because of lack of space, it was sometimes impossible to enlarge present yards and the railway was faced with the problem of relocating and designing new yards.

Reprieve for Island's Railways?

NEWs of proposals for closing railways in the Isle of Wight came close to the announcement that trial running had begun with 50-cycle electric traction equipment on the Lancaster-Morecambe-Heysham line of the L.M.R. If this system fulfils expectations under the test of normal service running, its economy in installation costs and the proved ability of electrified services to stimulate traffic might well justify its being considered for the island. A single transformer substation at Newport could serve the whole system, and the overhead line structures could be of the simple and relatively inexpensive types already doing duty elsewhere. Train sets with motor coaches for passengers, and light electric locomotives or power vans for freight, would meet the traffic needs of the island. It might be well to take the opportunity of renewing passenger stock rather than converting existing vehicles, so that the attractiveness of up-to-date styling and accommodation would reinforce the appeal of improved services. Bus travel on the island already taxes the roads to their existing capacity, and journeys are sometimes slow because of hills, corners, and narrowness. The cost of taking a private car across the Solent is a deterrent to some holiday makers. A rejuvenated railway system is worth considering as an alternative to throwing all traffic on to the island's picturesque but hardly arterial road network.

Diesels and Track

AN editorial note in our October 24 issue under the above heading suggested that track maintenance tends to benefit from the substitution of diesel-electric for steam power in train operation. This view finds confirmation from some recent experience of the Missouri-Kansas-Texas Railroad on the 304 miles of its North-Western Division. This sparsely-trafficked route was opened in 1906, and much of the rail laid in it is of the 60 and 65 lb. flat-bottom section, which in some cases has been in continuous use for over 40 years. The average spacing of sleepers is 1 ft. 8 in., and a large proportion of the mileage is not ballasted. Until recently, freight traffic over the line was handled by 2-6-0 steam locomotives weighing with tenders 147½ tons and with axle-loads of 22 tons, just within the 23½-ton maximum allowed. It was desired to substitute diesel power, but the only suitable diesels available were 107-ton Bo-Bo locomotives with 26½-ton axle-loads. Taking into account the constant torque and freedom from dynamic augment of the motor drive, also the absence of coupling rods and the short wheelbase of the bogies, it was decided to experiment with freight haulage by diesels of this type. The result has been completely successful; without any restriction of speed, due to their extra weight, the diesels are now operating considerably heavier trains without any troubles such as derailments or broken rails.

Port and Diesel Developments in India

THE construction by the Government of India of a new West Coast port, Kandla, in Kutch, largely to replace Karachi, which before Partition handled much of the import and export trade of Upper India, was mentioned briefly last week. Elsewhere in this issue a description is given of the branch of the Western Railway opened last autumn, which links Kandla with the rest of the metre-gauge system of northern and central India. The ready access given by the metre-gauge system of the former Bombay Baroda & Central India Railway not only to Rajputana, Delhi and Agra but also to Cawnpore and other places in Uttar Pradesh served by the metre gauge and the heavy traffic borne since Partition by the broad-gauge lines between Upper India and Bombay probably influenced the decision in favour of the metre gauge. Unlike Pakistan where the locomotive water shortage has resulted in extensive dieselisation on the North Western Railway, diesel traction in the Dominion of India hitherto has been restricted to yard working. The Kandla-Deesa line however eventually is to be diesel worked entirely. The local water is unsuitable for steam locomotives, the branch is

remote from the coalfields of Bihar and Bengal, oil installations are planned for the Kandla area, and experience gained with dieselisation will aid study of this form of motive power for possible adoption for "road" service elsewhere in India.

De Luxe Air-Conditioned Stock for Egypt

IN 1951, the Egyptian State Railways made out a five-year programme in which approximately £12,000,000 was to be spent on the renewal of rolling stock. The programme also included the introduction on the steam train express service between Cairo and Alexandria, of de luxe air-conditioned coaches for which a small surcharge was to be imposed. The Metropolitan-Cammell Carriage & Wagon Co. Ltd. has recently completed at its Salfley Works, the first two of ten of these air-conditioned coaches, which are described and illustrated elsewhere in this issue. The coaches are built to the new E.S.R. standard, 72 ft. over headstocks, and of vestibule design; accommodation is arranged for 39 passengers. Accommodation is provided in the vestibules for heavy luggage, together with a buffet, attendants' compartment and toilet. Considerable attention has been given to the comfort of passengers by the provision of revolving chairs and the prevention of sun glare. Full-view windows of Calorex glass are provided, together with clear plate glass; window curtains are also fitted.

Illumination of Marshalling Yards

FLOODLIGHTING towers are becoming a familiar sight in marshalling yards and other groups of sidings on the French National Railways, where installations ranging from one tower on small sites to four or five disposed about larger areas can be seen on many main-line journeys. The groups of floodlights are trained with their beams roughly parallel with the tracks and projected in both directions, so that there is good illumination between rows of wagons. It is necessary for the towers to be lofty to avoid dazzle from the powerful light sources, but there are maintenance advantages in having the lighting units in concentrated groups instead of scattered on a large number of structures of medium height. The freedom from obstructions on the ground is not only convenient for men moving about the yard, but removes a potential source of injury to engine crews, who can lean out of the cab during shunting movements without risk of being struck by lighting standards. It is generally agreed, also, that there is less fatigue in night work, and consequently reduced liability to accidents, when there is uniform illumination from remote sources instead of a large number of moderately powerful lamps within the normal field of view.

Some Serious Mistakes

THE accident at Culter on December 3, 1951, showed what can result when mistakes are made in carrying out new work, inspection is inadequately performed, and some other factor coincides with the dangerous condition so created. Colonel D. McMullen's report, summarised in this issue, shows that the main facts were not in dispute, although there was some argument about where final responsibilities lay. Some points were connected up in discordance with the operating lever but this would have been revealed had not certain circumstances led to the total withdrawal of blades from a detector and the relative signals being left connected, contrary to rule. This allowed the platform starting signal to be pulled off for a train which was wrongly directed into a siding line. In the ordinary way, no doubt, the enginemen would have noticed that, but unfortunately their attention was distracted by a troublesome brake pump and they found themselves heading for the buffer stops too late to pull up. Luckily no injuries resulted. The lesson to be learned from this case is of general application to all maintenance and renewal work and it cannot be too strongly impressed upon all concerned.

British Railways Standard 2-6-0 Locomotives

THE first of 25 of the new standard type of mixed-traffic locomotives for British Railways has been completed at Horwich. The locomotive, No. 76000, is a class "4" 2-6-0 tender engine, and is the seventh class to appear of the 12 types which will cover the whole range of operating requirements on British Railways so far as steam traction is concerned. With an axleload under 17 tons, the engines will have a very wide route availability. On completion they will be allocated, five to the Scottish Region, 15 to the Southern Region, and five to the North Eastern Region. To facilitate both manufacture and repair the new locomotives have many features in common with British Railways standard locomotives already in service, which include the cab, bogie, rocking grate control, boiler mountings, reversing gear, and lubrication. The tender is identical with the standard class "4" 4-6-0 mixed-traffic tender engines built at Swindon and first placed in service in July last year. The flange plates are common to the L.M.R. class "4" 2-6-0 engines, but the heating surface and grate area is somewhat less in the present design. The locomotive is described and illustrated elsewhere.

Memories of the "Decapod"

ST. GEORGE slew the dragon and Jack the Giant Killer his giant. Christian disposed of Giant Despair, but the Great Eastern Railway 0-10-0 Decapod locomotive never got beyond a demonstration against the encroachments of electricity. In fact, it was partly the electric tram, by drawing off some of the G.E.R. London suburban traffic, that eased the strain on the locomotive stock and made it unnecessary to proceed to the extreme measures represented by the Decapod. The history of this locomotive has been recalled recently in a lecture by Mr. W. O. Skeat to the Newcomen Society. The Decapod was required to show it could equal electric traction by accelerating a 300-ton train from rest to 30 m.p.h. within 30 sec. It did so in a trial run on April 26, 1903, hauling 335 tons and in boisterous weather. The run was made on a test stretch near Chadwell Heath, where apparatus believed by the author to have been the first used for electrical recording of train speeds, had been installed. Later the Decapod was rebuilt as a 0-8-0 tender engine, in which form it ran until late 1913. Many original features of the design were described in the lecture, including a "twist-grip" sanding control on the regulator handle.

Another Passenger Charges Scheme

IN view of the increase in railway wages last October, the known increase in the cost of some materials during the year, the falling-off in merchandise and passenger traffic in the past few months, and the Government's own action last summer in vetoing the increase in main-line passenger fares authorised by the approved current Passenger Charges Scheme, it is hard to see why the Minister of Transport, Mr. Alan Lennox-Boyd, should have been surprised by the promptitude with which the British Transport Commission has sought to remedy its financial situation by increasing its passenger revenue. The Minister's statement shortly before the House of Commons rose for the Christmas recess is recorded elsewhere in this issue. The Commission seeks, not to alter the current Passenger Charges Scheme with a view to an increase in some of the charges authorised therein, but by availing itself of a loophole in the Transport Act, 1947—of which the Minister might well have been apprised by his advisers—to submit an entirely new Scheme within a few months of the authorisation of the existing one; such a Scheme, if it is to produce more revenue, must involve the increase of some existing fares—the Commission has stated as much to the Minister—but it may not by any means involve a rise in all fares.

The amount which the B.T.C. has to raise to keep itself out of the red is £5.7 million in a full year. Increases in costs and wages last year are estimated to add £32 million to operating costs in a full year, which would result in an

annual deficit of £20.22 million. The threatened deficit would have been £2 million less but for the Government intervention in the application of the current Passenger Charges Scheme. The increase of some 5 per cent in railway and other B.T.C. freight charges authorised from December 1 last is expected to produce £14.5 million a year. The Commission therefore seeks presumably to obtain an additional £6.8 million a year from its new Scheme.

The total revenue in 1951 from British Railways passenger and London Transport road and Underground services was £166 million, of which £107 million was from British Railways passenger services. The Commission's passenger revenue that year also included some £44 million from its provincial and Scottish road passenger undertakings—slightly more, incidentally, than the revenue from London Transport buses and coaches—and £5½ million from British Railways marine services. Neither of these sources of revenue is likely to be affected by the new Charges Scheme, in so far as the shipping receipts are derived mainly from North Sea, Channel, and Irish steamers, and not from the Clyde and other local services.

Against £166 million, the £6.8 million which the Commission probably will seek so as to gain a surplus on these passenger activities may not seem great. The feature of the current Charges Scheme which aroused the greatest bitterness was the increase in the cost of travel to and from work, such as season tickets, which caused the Government last year to intervene. The Scheme did not involve any great increase in the cost of holiday travel: the present ordinary third class railway return is 1.75d. a mile, against the 1.8d. of the former monthly return bought by most holidaymakers; against this must be set items such as the increase last summer in restaurant car meal prices, which has done much to detract from the advantages of rail over motorcoach travel. Since last year the attractions of motorcoach and air travel within Britain have been increased by low fares, of which the cheap Anglo-Scottish air fares are a notable example, improved services, and better amenities, and the prospect of more to come. Holiday travel by rail is highly susceptible to competition, and as regards problematical fare increases railway receipts already are reacting under the law of diminishing returns. This soon may begin to apply also to British Railways services to the Continent, with their high fares. Long-distance business travel, not a very considerable item in total receipts, is likely to be affected by the availability next month of higher-octane petrols as well as by the development of internal air services. To increase the ordinary third class single fare from 1½d. to 2d. a mile, already authorised under the current Scheme, would almost certainly lose traffic to the railways.

Whilst some fares must be increased, it seems likely that the Commission may prefer to start again and revise the basis of passenger charges. It has been suggested in many quarters that the known remunerative character of well-filled long-distance passenger trains and the susceptibility of holiday railway travel to road and air competition might result in abandonment, in the new Scheme, of the mileage rate, or at least in adoption of a tapering scale. British Railways receipts from full fares, however, even in August are only some 60 per cent of the total; nor is it safe to assume that most expresses are filled enough to offset rising operating costs. Yet such a step might go far not only to increase revenue but to stop the undoubted drift of holiday traffic away from the railways. Increases in some miscellaneous sources of passenger revenue, such as Services traffic, should prove fruitful, and the traffic might bear increases in some excursion and other cheap fares. As to season ticket and other business travel, some carefully chosen increases seem inevitable; they will certainly be most unpopular, and the Government may well shrink from them for political reasons, apart from their inflationary effect on the national economy. Public opinion also may demand readjustment of the fares burden as between the London and provincial travelling public. Meanwhile there must be a public hearing of the new Charges Scheme, and the whole process—not, it is to be hoped, as lengthy as when the existing Scheme was submitted nearly two years ago—of hearing objections and counter-proposals is to begin again.

Coras Iompair Eireann

THE annual report for the year ended March 31, 1952, of Coras Iompair Eireann (Irish Transport Company), of which Mr. T. C. Courtney is Chairman, is the second presented by the undertaking and the first to cover a full year. The first report was for the ten months from June 1, 1950, when the Board was formed, to March 31, 1951, and was summarised in our February 15, 1952, issue. Some of the principal statistics for the two periods are given below to enable trends to be compared:—

	April 1, 1951— March 31, 1952 £	June 1, 1950— March 31, 1951 £
Railways—		
Passenger traffic receipts...	2,012,711	1,562,762
Goods traffic receipts ...	3,717,434	2,641,051
Miscellaneous receipts ...	39,064	30,638
Total receipts ...	5,769,209	4,234,451
Expenditure ...	7,455,970	5,183,488
Loss ...	1,686,761	949,037
Road Passenger—		
Receipts ...	4,426,405	3,383,070
Expenditure ...	4,033,571	3,027,310
Profit ...	392,834	355,760
Road Haulage—		
Receipts ...	1,362,004	920,126
Expenditure ...	1,372,620	950,035
Loss ...	10,616	29,909
Canals, loss ...	52,732	29,219
Docks and harbours, loss ...	9,361	10,862
Total loss ...	2,091,720	657,092

It will be seen that on railway working the loss was £1,686,761. The only section which showed a profit was the road passenger department, which made £392,834. There was a net operating loss of £1,394,124.

The "Radio Train" conveyed a record number of passengers during the year. Four broad-gauge diesel railcars were delivered, formed into two trains by the addition of buffet cars, and put into operation between Dublin, Kingsbridge, and Waterford. More would have been introduced had it not been for the protracted strike of C.I.E. electricians. In addition, four railcars went into service on the narrow-gauge West Clare section. A second diesel-electric locomotive of 915 h.p. went into service and is yielding expected economies in operation. Rolling stock built during the year consisted of twelve coaches, nine 20-ton brake vans, and an 80-ton wagon for conveying heavy machinery; the output would have been greater but for the difficulty of obtaining materials. To cater for the expansion of the dressed meat trade a fleet of rail-road insulated containers was provided and was highly approved by traders; further insulated equipment will be built. The Board introduced the first tank vehicle for conveying hot bitumen and tar in bulk, and more units are to be built for rail and road. Trials with a turf-burning locomotive gave encouraging results.

To overcome the shortage of steel and other constructional material, orders were placed in England for 1,000 sets of wagon underframes, wheels, axles, brake and draw gear, and body ironwork, and 100 coach underframes. When normal suppliers could not deliver, the Board, to build up stocks, had to seek alternative sources of supply, at the cost of a considerable increase in expenditure. As an example, 2,000 tons of rails were bought in Germany at £13 a ton more than the price then ruling in Great Britain.

The appropriation account had a balance forward at March 31, 1951, of £1,808,884, and adding the full deficiency for the year, a total of £3,900,604 resulted on the debit side of the account. This was reduced by a non-repayable Government grant of £1,817,000, leaving a balance forward to next account of £2,083,604. The grant included £445,000 to meet expenditure incurred in stock piling and increased prices of stores and materials, and £212,000 representing the extent to which expenditure on renewals exceeded depreciation provision. After allowing for these items, the balance remaining of £1,160,000 was to meet working losses. The losses, excluding interest on transport stock, amounted to £1,614,614 and the excess of £454,614 over the amount included in the estimate is represented by additional expenses between the time when the estimate was made up and the end of the financial year. These expenses could not have been foreseen when the Board submitted its forecast of losses for the year, on

which the estimate was based; they were mainly made up of increases in salaries and wages and in price of coal and other materials, and failure to achieve expected economy in operating costs as a result of the non-arrival of diesel railcars.

The undertakings of C.I.E. (1945) were losing £1,000,000 a year when taken over by the Board in June, 1950. Between then and March, 1952, labour costs rose by more than £1,000,000 a year and costs of materials similarly. In September, 1951, increased rates and fares were introduced, which have brought in just over £1,000,000 a year more revenue. Allowing for the alteration in circumstances since June, 1950, losses at the end of March, 1952, were at the rate of £2,000,000 a year. Some materials have been reduced in price, but demands for increases in salaries and wages continue to be made. To attempt to arrest losses, the Board has embarked on a policy of curtailment of expenditure which inevitably entails a reduction in staff. Rates and fares, except on Dublin City buses, have been surcharged 5 per cent. A more drastic and fundamental approach to the deficit problem is seen to be necessary. If the Board could quickly provide itself with modern equipment, particularly motive power on the railways, the loss might be reduced, and plans to this end are being pushed ahead. This will take some years, and meanwhile, unless considerable additional traffic can be secured to its services, particularly the railway, it appears that the Board must be reconciled to operating at a substantial deficit each year.

The Design of Small Railway Underbridges

MODERN underbridge design and form of construction are necessarily dependent on the fact that almost all bridgework is in the form of reconstruction involving erection under traffic, and is therefore influenced by the type of bridge that is being replaced, the weight and density of the traffic, and the topography. Subsequent maintenance is an equally important factor to be considered. Modern practice on these lines has thus been the subject of careful study by British Railways engineers, and the trend of policy adopted by the Western and other Regions is clearly shown in a paper entitled "The Design of Small Railway Underbridges with Special Reference to Erection and Maintenance Under Traffic," recently presented to the International Association of Bridge and Structural Engineering, by Mr. P. S. A. Berridge, Assistant to Engineer (Bridges), Western Region.

The methods adopted in designing bridges to carry loads equivalent to the maximum effect of British Standard unit loads plus impact due to hammer-blow, rail-joints and lurching, and their longitudinal distribution are first explained. Use of transverse sleepers bedded on ballast across bridges, wherever construction depth permits, is advocated, as this not only facilitates track maintenance, but also provides a better-running road, especially at the approaches, than if longitudinal timbers or non-ballasted track are laid. It does, however, entail waterproof protection between the ballast and the steel or concrete decking, and this waterproofing in turn has to be protected from damage caused by the stones of the ballast and platelayers' tools by a top layer of brindled tiles. Furthermore, installation of such protection requires total occupation of the line, and it can be undertaken only in fine weather or under tarpaulin tents, as it must be kept dry. A typical form of waterproofing consists of a preliminary bitumen primer applied cold to the decking with a brush, and two layers of Pluvex, or similar bitumen sheeting with a hessian base, bedded in, separated by and covered with three layers of hot bitumen compound. Finally the tiles are laid smooth face downwards and run in with the compound.

The paper then quotes the comparative costs of fabrication, erection, concreting, waterproofing, and maintenance for various types of superstructure construction for double-line 40-ft. spans, alluded to editorially in our June 20 issue. Among the forms of construction now used for deck-type spans up to about 50 ft. in length, one embodying multiple longitudinal pre-cast pre-stressed concrete beams with

transverse post-tensioning is specially attractive and has several important advantages. These are a relatively shallow construction depth, the small quantity of steel involved, a long life with a minimum of maintenance, and no necessity for waterproofing except caulking between the beams. Either the Freyssinet cable or the Lee-McCall bar system of prestressing is applicable and the work is done in railway workshops.

For longer deck-type spans, plate-girders are generally used—of mild steel up to and high-tension steel over 80 ft., the superstructure for each track being kept separate wherever possible, so as to avoid transverse distortion caused by unequal loading of the tracks. Pre-cast reinforced concrete well-deck units are now popular for the decking of these spans. They are particularly suitable with welded girders offering an uninterrupted level surface on which the deck units can rest directly, with layers of bituminous sheeting between the concrete and steel. If riveted girders are used, a layer of concrete of thickness sufficient to give a level surface above the rivet heads on the thickest cover plates is cast in short lengths on the tops of the girders, to provide a seating for the well-deck units. The latter are about 3 ft. wide, and bituminous sealing compound is run into the transverse joints between them. As in other types of continuous decking, this concrete is not considered as part of the main girders nor as affording any relief in their flange stresses.

The shallow construction-depth of the through-type span makes it the commonest form of construction on British Railways. The latest types of decking for these spans were described in our June 20 issue, and more details of the primary and secondary decking units were given in an article on pages 207-210 in our August 22 issue. The importance of efficient jointing between the deck and the main girders is stressed; most of these modern forms of decking are lowered between the inclined stiffeners of the girders and secured to them by high-tension precision-tightened bolts. The paper also points out that where construction depth permits, deep cross girders should be used, as with the jack arch type of decking.

The latest development is the provision of large pre-stressed concrete deck units spanning between the main girders. As the slabs are only 10 in. deep and no waterproofing is required except at the joints, a relatively shallow construction depth is secured. In conclusion, the author gives some notes on the surface preparation of new steel-work before painting, and on the methods of erection. There is also a graph showing the number of line occupations and periods of speed restrictions necessary during the reconstruction of double-line, three-girder, through-type 40-ft. spans where the new spans have decking consisting of (a) steel cross girders, stringers and plate decking, (b) steel joists at 2 ft. 8 in. centres and *in situ* concrete, (c) primary and secondary deck units, (d) prestressed concrete units, and (e) cross girders and pre-cast concrete jack arches, depending on the method of erection employed. Total occupations, and periods of work between trains and also independent of trains are shown separately, so that although the graph is obviously hypothetical, it contains much important food for thought.

Railways in 1853

OUTSTANDING among the railway openings of 1853 was that of the first railway on the great Indian continent. The actual section brought into use was not lengthy, but it was the beginning of a system which grew to some 41,000 miles. Efforts had been made for some years by companies in Great Britain to secure railway concessions, but there were lengthy delays. Eventually a few railway companies were chartered, and the first to complete any line for public traffic was the Great Indian Peninsula Railway, which opened the 21 miles between Bombay (Victoria) and Thana on April 18. It was built to the Indian standard 5 ft. 6 in. gauge, which had been adopted by the Court of Directors of the East India Company (then the governing body) on December 4, 1850, on the advice of their Consulting Engineer, F. W. Simms, and despite the urgent

advocacy of Lord Dalhousie, the Governor-General, in favour of 6 ft. Some months ago the Government of India planned extensive centenary celebrations, but an austerity régime now prevails, some of the proposals have been abandoned, and it is probable that the Delhi exhibition and a Bombay-Thana centenary train will be the main features.

In Great Britain, the North Eastern Railway took shape with a joint working union as from April 1, 1853, under one general manager, of the York, Newcastle & Berwick, the York & North Midland, and the Leeds Northern. The last-named launched a fantastic rate war from its opening in 1852, and the only solution appeared to be amalgamation. Thomas Elliot Harrison, who was not only a fine engineer but also a railway manager of great acumen, negotiated this. A Bill promoted in the 1853 session had to be withdrawn because of the "Cardwell Resolutions." Cardwell presided over the Standing Parliamentary Committee and favoured working arrangements rather than amalgamations—hence the working union. Nevertheless, an Act was secured in 1854 and the honoured name North Eastern emerged. One hundred years ago also saw the beginning of the London Underground system with the incorporation on August 15, 1853, of the North Metropolitan Railway Company for a 2½-mile line from Edgware Road to Kings Cross, and a capital of £300,000. The G.W.R. took an interest in the scheme and agreed to subscribe, with the right to nominate one third of the directorate. It became the Metropolitan Railway by Act of August 7, 1854, with powers to extend to Paddington, and was actually built as a broad-gauge line and worked for a short time by the G.W.R.

Openings of new British lines (some of which are recorded in our Scrap Heap columns) totalled about 180 miles of more than local importance. Irish openings were noteworthy, and amounted to at least 135 miles, partly because of Dargan's great International Industrial Exhibition in Dublin, opened by the Lord Lieutenant on May 12. William Dargan (1799-1867) was not only a contractor who built the greater part of the railway system of Ireland, but was also a captain of Irish industry. He financed the Exhibition single-handed by advancing £80,000. The most interesting Irish opening was the temporary Boyne Viaduct, which completed rail connection between Dublin and Belfast. As the permanent viaduct could not be completed in time, the scaffolding was adapted as a bridge at a cost of £2,000 and opened on May 12. However, because of conflict about through rates, the all-rail route was not made available until June 22.

Towards the end of the year, Edward Watkin (1819-1901) received a presentation from his brother L.N.W.R. officers on leaving to become General Manager of the Manchester, Sheffield & Lincolnshire Railway under an engagement for five years at £1,200 per annum. During the next forty years he converted this railway into one of the most aggressive competitive forces, and (as the Great Central Railway) it built the last main line into London. Despite outstanding personal success, and a baronetcy, it is doubtful whether his personality endeared him to anyone. A once well-known name made its entry on January 1, 1853, when the East & West India Docks & Birmingham Junction Railway shed its cumbersome title in favour of North London Railway. During the year, Fenchurch Street Station was enlarged and mainly rebuilt to meet the needs of a growing traffic, and the expected further needs of traffic from the London, Tilbury & Southend Railway, then being built. The first portion of the new station was opened on November 19, 1853. Letter-receiving boxes were placed on all the principal stations of the London & South Western Railway. Despite the conveyance of mail over nearly 20,000 miles of railway, there were still nearly 4,000 miles of mail coach and mail cart routes. In 1853, the L.N.W.R. introduced staff working on single lines.

One hundred years ago was a great period of expansion overseas. Railways were being built in many parts of the world, including the first in Australia, and lines in Norway, Chile, and various parts of India. This period marked the beginning of the great Victorian industry of financing, building, and equipping much of the world's railway system outside Europe and the U.S.A.

LETTERS TO THE EDITOR

(The Editor is not responsible for opinions of correspondents)

Colour-Light Signals

December 24

SIR,—We agree entirely with your correspondent Mr. Richard Parkes, writing in your December 19 issue, that there is considerable advantage to be derived from colour-light signals. It is for this reason that British Railways have increased the number of colour-light signals from 4,300 at the end of 1947 to 6,500 at the present time. There is an extensive programme of modernisation in hand (of which the York, Euston and the London-Brighton line installations recently described in *The Railway Gazette* are notable examples), but, as with many other railway improvements, the scale and speed of this programme is at present limited by the available physical resources.

Yours faithfully,

D. S. M. BARRIE,
Public Relations Officer

The Railway Executive, 222, Marylebone Road,
London, N.W.1

Gatwick Airport Development

December 19

SIR,—Much has been said about the diversion of the main Brighton Road for the enlargement of Gatwick Airport, but no one has yet called attention to the far more serious menace to passengers travelling on the main Brighton railway. The new runway lies within a few yards of this four-track line. As everyone travelling on this line knows, there are frequently four trains passing through Gatwick Airport Station at the same time, two of them expresses at about 70 m.p.h. What protection is to be afforded to the millions of passengers who annually for business or pleasure use this most congested line? The disaster at Harrow & Wealdstone pales into insignificance before the prospect of four trains running into a modern airliner which by a few yards has overshot or undershot the runway—a possible occurrence.

Yours faithfully,

J. BOWTHORPE,
Chairman,
Gatwick Protest Committee

Lowfield Park, Surrey

Scottish Transport Organisation

December 16

SIR,—For a usually sound organ, *The Railway Gazette*, in its editorial on Scottish Transport in the December 12 issue, seems singularly ill-informed.

First, in the matter of Clyde steamer services. How do you lay this at the door of politics? This trouble arose because a whole community was seriously affected by the proposals. Certainly political motives had no place in the matter. You admit the right of the public to grumble if dissatisfied, which is precisely what happened. In the article reference is made to the sparse population of many parts of Scotland. This is, unfortunately, only too true; nevertheless, the existing population has a right to live and to move about on its lawful occasions, which brings me to my second point, that many of its members are unable to do so because of the high rail fares, and often the alternative mode of transport, road services, means very long detours around long sea lochs so that the journey cannot be completed in the time at one's disposal.

So far as the West Coast of Scotland is concerned, and that is the side of the country worst hit, there is no lack of holiday-makers from May to October as anyone endeavouring to obtain hotel accommodation insufficiently early will quickly find. The Scottish Tourist Board is doing good work in this respect. All the tourists are not motorists, and not all return from their holiday with their

enthusiasm literally damped! I commend to you a glance at the monthly summaries published in *The Scotsman*.

In the far north the position is rather different. Here the tourist is discouraged, not by the Highlander who would welcome him, but by the vexatious state of many of the roads, and this seems to be the case of a short-sighted Ministry tightly holding the purse strings and throttling the renewal programme and the tourist industry at the same time.

It seems evident that there must be some areas served at a loss and the best solution to the problem is to set up a Scottish Transport Authority to work out its own salvation in the hands of the people on the spot. And they could do it!

Yours faithfully,

CAMPBELL HIGHT

1, Caroline Road, Llandudno

The Isle of Wight Railways

December 14

SIR,—The paragraph in your current issue relating to the intended closing of lines in the Isle of Wight makes sorry reading to anyone familiar with the holiday influx—eight or ten weeks only, it is true—and the great strain put on all forms of transport plus the inadequacy and often rather dangerous alignment of Isle of Wight roads. The step seems not only retrograde but unthinkable.

That it is a fairly long-term policy does little to alleviate the blow which, in my opinion, will have very serious repercussions on the island's tourist income, and thus its general prosperity.

It is not clear whether the Bembridge branch is to remain, as well as the Ryde-Ventnor section.

Yours faithfully,

G. CULLIS

797a, Christchurch Road, Bournemouth

[We understand that it is intended to close within a year all the island lines except Ryde-Ventnor and Ryde-Newport-Cowes. Between Ryde St. Johns Road and Newport all stations except Haven Street are to close shortly.—ED., R.G.]

British Express Train Speeds

December 13

SIR,—More than seven years have elapsed since the end of the war, and British express train speeds, with few exceptions, are still far inferior to those of 1939. The difficulties which the Railway Executive has had to face are real, but the amazing recovery, and even bettering, of prewar standards elsewhere, notably in France, as recorded in your columns, stands out in sharp contrast with the slow progress made in this country.

The Great Eastern section of the Eastern Region and the main West of England line of the Southern can now show some express timings better than before the war, but the great centres of population and industry in the West Midlands and North are worse off, as regards journey times to and from London, than in 1939. From Sheffield, even with the slight improvements introduced this winter, the best timing is 3 hr. 21 min. (by one up train to St. Pancras on Mondays and Fridays only) compared with well under three hours by more than one route in the early years of the century.

The final column of the accompanying table shows the time which journeys would occupy at an average speed of 70 m.p.h.—readers will be well aware that in France, the U.S.A., Italy, and elsewhere, average speeds of 70 m.p.h. and above, over long distances, are almost a commonplace, and even Switzerland now has a 70 m.p.h. run. Admittedly these speeds are largely the result of electrification or "dieselisation"; on the other hand, at home, the prewar

streamline trains were timed at almost 70 m.p.h. between Kings Cross and Darlington and Kings Cross and Leeds and kept time better than their counterparts today.

FASTEST TIMINGS TO AND FROM LONDON, 1939 AND 1952
(Summer Services)

	Best time		Time, at 70 m.p.h.
	1939	1952	
	Hr. Min.	Hr. Min.	Hr. Min.
Kings Cross—Aberdeen ...	A 9 45	11 1	7 28
"—Edinburgh ...	B 6 0	7 6	5 37
"—Leeds ...	B 2 43	3 23	2 39
Euston—Glasgow ...	6 30	8 0	5 44
"—Liverpool ...	3 15	3 45	2 46
"—Birmingham ...	1 55	2 10	1 37
St. Pancras—Sheffield ...	2 56	3 30	2 16
Paddington—Bristol ...	1 45	2 10	1 41
"—Cardiff ...	C 2 41	2 44	2 4
"—Plymouth ...	4 0	4 15	3 14
Waterloo—Southampton ...	C 1 27	1 28	1 8
Liverpool Street—Norwich ...	2 10	D 2 10	1 39

A Streamline train from Edinburgh
B Streamline train

C June, 1939
D Now 2 hr.

It may be argued that these and other very fast steam trains of the prewar years were possible only because they were hauled by locomotives maintained in first-rate condition; manned by expert drivers and enthusiastic firemen, fit and willing to work hard; burning good coal, and running on tracks so well maintained that very high speeds could be reached on favourable sections. If it is impossible today to realise all these conditions (though recent developments on the Great Eastern section suggest that this may not apply universally) the only practicable alternative—as large-scale electrification will be excluded for many years because of cost—is to entrust the principal express trains to diesel or similar locomotives, which use a raw material of uniform quality and in which the machine largely does the work of the man. One hundred such units completed or "on the stocks" within the next two years would surely be worth the sacrifice of 200 new steam locomotives.

As it would appear therefore to an outside observer, the policy of British Railways in this matter should comprise three stages, which would dovetail and overlap considerably.

Stage 1.—The restoration as soon as possible of prewar speed standards—express services at about a mile-a-minute or somewhat better in suitable cases. There seems no obvious reason why this stage should not be completed within the next year or eighteen months and include schedules of, say, 1 hr. 50 min. to Birmingham and 3 hr. or thereabouts to Liverpool, Manchester, and Leeds.

Stage 2.—The gradual replacement of steam haulage by diesel locomotives, or possibly to some extent by gas-turbine engines for the principal express services. It is essential that an early decision should be made on the most suitable unit for this purpose and a construction programme put in hand promptly. Improvements in signalling and passenger train braking would be carried out, enabling a 70 m.p.h. standard to come into force, at least for the principal trains over many of the most important routes.

Stage 3.—Large-scale electrification, commencing with the main-line sections which are most heavily graded or carry very heavy traffic, or both. This stage, which may take twenty years or more for completion, is bound to come eventually because, apart from enabling the railways to provide services up to the standards now attained elsewhere, the benefits to the national economy as a whole will be so great—releasing for export fuel now consumed most inefficiently, improvement of the "load factor" of the Grid, and a substantial abatement of smoke and dirt in cities.

The Railway Executive may have already well-developed plans covering some such programme as set out above, but it has so far given little indication of this to the public. Unless a really progressive policy in this matter is initiated and consistently pursued, with regard to the urgency of meeting the ever-increasing competition of air and road, it may be—adapting an old saying—a case of "shutting the carriage doors after the passengers have been stolen"!

Yours truly,

W. G. POLACK

294, Hagley Road, Birmingham 17

Publications Received

Transport in Africa.—The January, 1953, issue of the *African World* is largely devoted to African transport. An article on railway motive power describes the part played by British builders in supplying the majority of locomotives for the 40,000 miles of railway in the continent. Mr. W. H. Salkield, General Manager of the Gold Coast Railways & Harbours, describes the important additions in hand to the transport facilities provided by his system. There are notes on George Pauling, the contractor, associated with Cecil Rhodes in construction of the southern end of what was planned to be the Cape-to-Cairo Railway; on expansion of the Benguela Railway; and on the railways of the Belgian Congo. An article "The Iron Road in Africa" traces the origin and progress of railway construction in the different regions and describes their vital part in economic development of the many territories.

Signalling Relays.—The Westinghouse Brake & Signal Co. Ltd. has issued seven further sections for Part 8 of its new Signalling Catalogue. The new sections are numbered 3D, 3E, and 5B, E, F, L, and Q. Sections 3D and 3E deal respectively with the a.c. relay style C.R.A.L.2, and the A.M.L. relay style

P. The remaining sections are concerned with the company's range of plug-in relays. All sections are punched for filing in the catalogue loose-leaf binder.

Lines of Character. By L. T. C. Rolt and P. B. Whitehouse. London: Constable & Co. Ltd., 10, Orange Street, W.C.2. 8½ × 5½ in. 188 pp. Illustrated. Price 21s.—This is a record of exploration of railway byways in quest of the variety "which is part of the magic of railways" and of which, despite increasing unification, much can still be found. The selection is personal and random, ranging from lines as "main" as the Highland and Somerset & Dorset to such outposts as the Tanat Valley and the Tralee & Dingle. There are separate chapters for England, Wales, Scotland and the Isle of Man, and Ireland. Most of the excellent photographs are the work of Mr. Whitehouse and were taken specially for the purpose. The style is racy and the enthusiasm infectious, and, in all, the book is a worthy successor to Mr. Rolt's "Inland Waterways of England" and "Horseless Carriage."

Services to Germany, Winter 1952-53.—A British Railways booklet of current services and fares to Germany gives timings by both Eastern and Southern Re-

gion routes: Harwich-Hook, Dover-Ostend, and, for South Germany, routes through France as well. Services between the Hook of Holland and the Ruhr, Rhineland, and beyond are shown by the Dutch-German frontier of Venlo/Kaldenkirchen only. There are now no through bookings to Cologne and North Germany via Calais-Brussels-Aachen.

Calendars for 1953.—We acknowledge the receipt of calendars for 1953 from the Department of Railways, New South Wales; Swiss Federal Railways, *Railway Review*; A. C. V. Sales Limited; and the Universal Ball Bearing Repair & Manufacturing Company.

Trucks and Tractors. Brief specifications and principal dimensions of different designs of Coles Electric Eel trucks and tractors are given in an illustrated brochure issued by the maker, Steels Engineering Products Limited. The capacity of the trucks is from 30 cwt. to 50 cwt. and they include low lift and elevating types, the latter being fitted with an electro-mechanical system with automatic limit switches in each direction. The drawbar pull of the tractors is 1,200 lb. and 4,000 lb. Also included are principal features of the 25 cwt. boom, and 20 cwt. telescopic lift boom trucks, with boom heights of 68 in. and 102½ in.

THE SCRAP HEAP

Some Railway Centenaries of 1953

Below is a list of some British railway centenaries which occur during 1953:—

February 1, Widnes to Warrington opened (5½ miles). St. Helens Railway.
April 4, Penshaw branch opened for goods (6½ miles). (Passengers June 1.) York, Newcastle & Berwick Railway.

May 16, Victoria Dock branch, Hull opened for goods (3½ miles). (Passengers June 1.) York & North Midland Railway.

June 1, Malton to Driffield opened (19½ miles). Malton & Driffield Junction Railway.

June 1, Pilmoor (Sessay Wood Junction) to Malton opened (22½ miles). Thirsk & Malton Railway.

June 4, Evesham to Oxford (Wolvercot Junction) opened (40½ miles). Oxford, Worcester & Wolverhampton Railway.

July 11, Grange Court to Hopesbrook opened (5 miles). Hereford, Ross & Gloucester Railway.

August 1, Willesden to Kew opened (3½ miles). (Goods from February 15.) North & South Western Junction Railway.

September 8, Aberdeen (Ferryhill) to Banchory opened (14½ miles). Deeside Railway.

October 1, Durston to Yeovil (Hendford) opened (19 miles). (Goods October 26.) Bristol & Exeter Railway.

November 1, Warrington to Altrincham opened (10 miles). Warrington & Stockport Railway.

November 2, Gelly-Tarw Junction to Merthyr Tydvil opened (6½ miles). Vale of Neath Railway.

December 1, Dudley to Tipton opened (1½ miles). Oxford, Worcester & Wolverhampton Railway.

December 6, Ludlow to Hereford (Barr's Court) opened (23½ miles). Shrewsbury & Hereford Railway.

Restaurant Car Meals

I took lunch (the main meal in Germany) in a German diner on two occasions. Choice of four meals at prices ranging from about 2s. 6d. to 7s. 6d. was provided. Thus the traveller is not confronted with the alternative of a meal at a cost of 7s. 6d. or none at all but can choose according to his appetite and purse. Surely similar facilities could be made available in this country and should encourage the traveller to have his meal in the diner. The three-course meal at about 5s. 5d. was on each occasion excellent and so was the service.—*From a letter to "The Manchester Guardian."*

White Elephant Near Regent's Park

The Chairman of the St. Marylebone Society told the London Development Plan inquiry recently that Marylebone Station goods yard "seemed a barren wilderness with the railway authorities scraping together a few bits of work in odd corners." Another speaker called the yard a "white elephant" and mentioned the grand ideas the old Great Central Railway had for this depot. So grand were they, indeed, that the writer of the G.C.R. goods traffic manual, "Per Rail," ran out of hyperbole in describing the establishment and could only remark: "From the warehouse one steps into the surrounding goods yard. But of the equipment of this it is quite impossible to convey any adequate notion in words.

... A network of rails covers the vast area, and all day long may be heard the noise of the shunters at work as, with the aid of the hydraulic capstans, they haul this way and that the cumbersome trucks and vans, or spin them round upon the turntables, and shift them easily from road to road."

In the Permanent Way

The Spanish have a story about an Englishman travelling on a branch line. After starting three-quarters of an hour late, the train stopped twenty minutes beside a dried-up river bed. Then it went off again. Ten minutes later it stopped with a shuddering bang. "What has happened?" asked the agitated Englishman. "A cow on the line" was the casual reply. After a long pause the train moved off again, only to stop again with another bang. "Another cow?" "No. The same one."—*Mr. Anthony Carson in a B.B.C. broadcast talk.*

Vae Vectis

(There has been some publicity about the possible closing of certain Isle of Wight stations)

There was gloom from Ryde to Yarmouth.

There was woe in Western Wight. Apprehension stalked abroad in Ventnor Town.

For a rumour had gone forth, East and west and south and north, That some Island stations might be closing down.

What a wail went up from Newport, What a plaintive "moo" from Cowes And what consternation ranged the countryside!

Twilight fell on Totland Bay And, in Shanklin, so men say, Every fuchsia and hydrangea drooped and died.

From the sandy shores of Solent, From the far Freshwater Bay, Every islander kicked up a frightful fuss;

"If the railways do not pay," "Why blame us?" is what they say, Though, of course, for years they've always gone by bus.

So the muffled bells of Bonchurch Mourn with melancholy moan And old Boniface looks out with sad surmise

To the rocky, western shore, Where the hungry breakers roar And the brine-encrusted Needles veil their eyes

Though the Romans came and conquered And departed in their turn,

Spurn the thought that rail has reached its terminus; Islanders, take heart again,

For, at least, the Pier Head train Isn't likely to surrender to a bus!

PLACIDUS

A Day at the Races



This horse and jockey display has been designed by the North Eastern Region for use in windows to advertise race excursions during the year

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

BELGIAN CONGO

Jadotville-Tenke Electrification

The official inauguration of electric traction on the section of the Elizabethville-Port Francqui line newly electrified with 50-cycle single-phase a.c. between Jadotville and Tenke, was performed by the Belgian Colonial Minister, accompanied by the vice-Governor-General of the Belgian Congo, on October 20. The railway uses an industrial frequency supply at 25,000 volts, and the locomotive traction motors operate on a.c. at this frequency after the voltage has been transformed down to a suitable level. Equipment for the electrification was supplied by Belgian manufacturers.

This project has been acclaimed in the Belgian press as the first to use 50-cycle current in normal commercial operation—a claim which appears to regard lines working at the same frequency in other parts of the world as being experimental. Nevertheless the adoption of electric traction in this part of Africa, and the decision to use the still comparatively untried 50-cycle system from the outset, are noteworthy steps. The line is worked by the Bas Congo-Katanga Railway. A previous reference to the electrification was made in the October 3, 1952, issue.

UNITED STATES

One-man Marshalling Yard Control

In the control tower of the remodelled marshalling yard of the Reading Railroad at Rutherford, Pennsylvania, 5½ miles east of Harrisburg, a machine has been installed which permits a single operator to control both the switch movements required in the marshalling and also the retarders. A master retarder is situated in the lead down from the hump, and a further group of four retarders in the four tracks into which this lead branches; three of these four branch into nine sidings apiece, and the fourth into six sidings, making a total of 33 roads.

The master retarder is used to maintain a sufficient distance between each pair of "cuts," and the remaining retarders to control the speed of entry into each siding.

As a train, with wagons uncoupled, is pushed over the hump, from the list of destinations of the successive cuts the operator presses the appropriate button on the panel of the siding to be taken by the first cut; he can also press the buttons for the next three cuts, the machine storing up the impulses until movement of the switches is needed. All switch movements are made automatically, leaving the operator free to manipulate the retarders, the controls of which are provided on an illuminated track diagram at the left side of the panel. The

operators work in three 8-hr. shifts, and can handle some 125 wagons hourly, or up to 3,000 a day. Including both this eastbound yard and a smaller westbound yard, the remodelling cost approximately \$3,000,000.

Burlington Cut-off Line Completed

On October 28 the first scheduled freight train passed over the new line which the Chicago Burlington & Quincy Railroad has built to shorten by 22½ miles its route between Chicago and Kansas City. Construction of the cut-off, which was described in our April 27, 1951, issue, involved 49 miles of new line, and the relaying and bringing up to high-speed standards of 21½ miles of an existing subsidiary line. The work, including heavy excavation in rock, has been completed in just under two years, at a cost of \$16,000,000. New passenger services, including a diesel-hauled "Zephyr" streamline train between Chicago and Kansas City, are to be introduced.

Flood Damage Claims

Lawsuits, originally filed in Chicago and transferred by order of the U.S. District Court for Northern Illinois to the Federal Court at Kansas City, Mis-

souri, have been brought by companies against the Atchison Topeka & Santa Fe Railway for damage to freight consignments, in transit over the Santa Fe, caused by the disastrous Kansas floods of 1951.

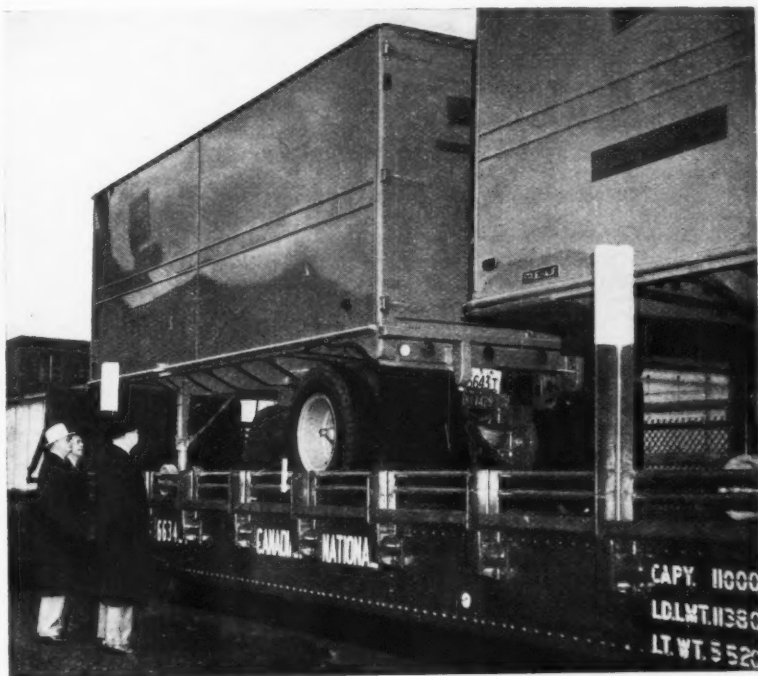
These are in the nature of a test case, as all the railways serving the area have advised consignors that they cannot accept liability for flood damage. In this matter the railways appear to be in a strong position, for after the Kansas floods of 1903, which were considerably less severe than those of 1951, the U.S. Supreme Court exonerated the railways from liability on the ground that the floods were an Act of God.

ARGENTINA

Transport in Second Five-Year Plan

The full text of the second Five-Year Plan has been published in Buenos Aires. Under the heading of transport five fundamental objectives are set forth: to guarantee the transport of produce to centres of consumption, ports and foreign markets; facilitate internal transport and connections with other countries, particularly neighbouring countries; stimulate the social and

New Freight Service in Canada



Railway-built road trailers loaded on Canadian National Railways flat wagon to be marshalled in a fast freight train. This is a stage in a new door-to-door service just introduced by the C.N.R. (see December 19, 1952, issue)

economic progress of the country; assist local industry to provide as much equipment and material as possible; and comply with National Defence requirements.

The railway programme includes relaying 2,800 km. and doubling 60 km. of track, installing c.t.c. equipment and block staff apparatus, renewing telegraph and telephone circuits, and many other smaller works in connection with signalling and communications, and enlarging substations. Electric services are to be improved, gauge unification is to be carried out, and new connecting lines and industrial branches are to be built. The Superf-La Cocha and Malargüe-Bardas Blancas lines are to be completed. The following motive power and rolling stock will be acquired: 255 locomotives, 460 passenger coaches, 1,757 goods and cattle wagons, ten complete diesel trains, and 55 diesel-mechanical and diesel-electric railcars. Train ferries and their terminal installations will be modernised. Some new stations will be built and others will be improved.

The unification and rationalisation of lines entering Buenos Aires and Rosario, already in progress, will continue. New running sheds will be built and existing sheds enlarged. Goods yards, goods stations and sheds will be improved.

New Tourist Train

The General Mitre Railway has introduced a new tourist night express running twice weekly between Buenos Aires, Rosario, Córdoba and Alta Gracia. It is composed of day coaches with numbered seats. Reduced rate return tickets are issued and there is dining car service. The train is named "El Turista."

SWITZERLAND

Main Line Doubling

The doubling of the last single-track section of the Lausanne-Neuchâtel main line has been in progress since 1946, between Yverdon, 24½ miles north of Lausanne, and Auvernier, junction of the Lausanne-Neuchâtel line and that from the frontier station of Les Verrières; Auvernier is three miles south of Neuchâtel. The distance between Yverdon and Auvernier is 19½ miles. The five-mile section between Auvernier and Bevaix is all but completed and work is in hand on the Bevaix-Gorgier-Saint-Aubin-Sauges section, 2½ miles. The second track on this section will be laid on the lake side of the existing line, and Gorgier Station is to be rebuilt.

The Lausanne-Neuchâtel-Olten main line has a ruling gradient of 1 in 96, compared with steeper inclines on the main line *via* Berne, and its curves are less severe. The better layout of the Lausanne-Neuchâtel main line already enables lightweight fast trains to run at up to 77½ m.p.h. over some sections, and it is expected that when the whole line is doubled much better timings than now possible will be achieved. Most heavy goods trains between the south-west and

the north of the country are routed *via* Neuchâtel.

On the Lausanne-Berne main line the only remaining single-track section between Lausanne and Fribourg is gradually being doubled. There is double track between Lausanne and Chenens, 31 miles, and between Rosé and Berne, 24½ miles, leaving a five-mile gap between Chenens and Rosé. Doubling between Chenens and Cottens, three miles, has begun. At Chenens there is to be a new station building and goods shed, and marshalling road extending over 2,106 ft.

FRANCE

Punctuality of Suburban Services

A report on the summer traffic into and out of Paris Est states that more than 94 per cent of the suburban trains, which are all steam-hauled, arrived on time; and trains 15 min. or more late were considerably less than 1 per cent.

Rail-Road Co-ordination

The Minister of Public Works & Transport has received a joint report of the S.N.C.F. and Road Haulage Federation giving the basis of a possible agreement between the operators of long-distance rail and road freight services. This report deals with both the question of the conditions under which the two forms of transport operate and the rates charged.

The Minister has approved entirely the section of the report referring to conditions of operation, but is withholding acceptance of the proposals on rates until he is satisfied that they will not have the effect of increasing the overall cost of transport to the consumer, which would adversely affect the policy of the Prime Minister to keep down the cost of living. It is believed that a joint approach by the S.N.C.F. and the Road Haulage Federation will be made to the Minister shortly.

S.N.C.F. Publicity

The cost of the S.N.C.F. of its publicity services amounts to approximately fr. 200,000,000 (£200,000) a year. This covers such items as the issue of propaganda posters, pamphlets and books, advertisements in the press and stands at exhibitions and fairs. It is claimed that the sum spent on these services is only a tenth of that expended by prominent shipping companies, and only a hundredth of the payments made by Air France on similar services.

As illustrating the efficiency of its publicity service it is pointed out that two years ago the S.N.C.F. was concerned at the falling off in the sales of cards giving the right to half-rate tickets for specified itineraries. Since May, 1950, total receipts under this heading have increased by nearly £200,000 at a total increase in publicity costs of £20,000.

Accidents to Staff

The S.N.C.F. claims that the progressive modernisation of its system is re-

ducing the number of accidents to staff. Figures for 1951 show that since 1938 there has been an increase of some 50 per cent in traffic handled; during the same period, the number of serious accidents to staff has fallen from 12,021 to 10,990 and fatal accidents from 262 to 144.

Branch Line Economy

The metre-gauge electric line between Villefranche-de-Conflent and Bourg-Madame in the Eastern Pyrenees showed in 1947 an estimated deficit of fr. 24,000,000. To reduce this loss, the S.N.C.F. removed staff from five stations, where duties are now undertaken by the train staff; altered the current supply arrangements to enable four substations to be closed; withdrew keepers from 11 level crossings; and modified the special rules for this line to allow one-man operation of trains. By these measures, the deficit was reduced to fr. 11,000,000 in 1950.

Measuring Side Play in Axleboxes

An apparatus designated by an employee at the Sotteville-Buddicom workshops of the S.N.C.F. enables the amount of side play in the races of roller-bearing axleboxes with outside journals to be read off accurately from a dial gauge. As a result it is possible to keep the side play within the permissible limit of 0.08 mm. by fitting a liner of the appropriate thickness between the exterior flanges.

AUSTRIA

Amstetten-Vienna Section Electrified

On December 19 electric traction was inaugurated from Amstetten to Vienna Westbahnhof, 79 miles, completing electrification between Basle and Vienna *via* the Arlberg.

WESTERN GERMANY

Improved Passenger Services

Several additional sleeping cars are running in services connecting to and from Scandinavia. Day trains from and to Copenhagen connect at Hamburg and Kiel with sleeping cars to and from Aachen, Basle, Cologne, Munich, and Nuremberg. Next summer a new pair of trains, the "Adria Express," will run between Munich and Villach in Austria, *via* the Tauern, with through coaches to and from Rijeka (Fiume) and Split (Spalato) in Yugoslavia, also Ancona and Venice.

New Ruhr-Luxembourg Connection

A pair of expresses (D 127/8) has been introduced between Koblenz and Luxembourg *via* Trier (Trèves). They connect at Koblenz with high-speed diesel services to and from Cologne, Wuppertal, and principal Ruhrgebiet destinations. The westbound train leaves Koblenz at 8.18 due Luxembourg 11.32 a.m.; eastbound, departure from Luxembourg is at 6.56 p.m., due Koblenz 10.2. By this service it is possible to make the return journey from the Ruhr to Luxembourg in one day.

The Kandla-Deesa Line of the Western Railway, India

Link between former B.B.C.I.R. metre-gauge system and new West Coast port: diesel working proposed

THE new metre-gauge line of the Western Railway of India between Deesa and Kandla, the new port being built on the west coast, was opened on October 2 by Dr. Rajendra Prasad, President of India.

After Partition, which gave Karachi to Pakistan, the necessity for a large port on the west coast of India north of Bombay was keenly felt. Traffic previously handled at Karachi had to be sent to Bombay with consequent congestion in the port and increased rail mileages in moving freight to and from northern and central India. The Government appointed a committee to investigate the possibility of a deep-sea port somewhere on the coast in the Kathiawar-Kutch region. The committee found that the need for such a port was immediate and recommended that it should be situated at Kandla, in Kutch. It also recommended that it should be connected with both the broad and metre gauge systems of the Western Railway.

The new line is an extension of the 17-mile branch to Deesa from Palanpur, on the metre gauge main line between Ahmedabad and Delhi. The total length of new construction is approximately 170 miles. Until the port of Kandla is completed, Gandhidham is the terminus, situated about seven miles from the port area. It crosses the 2-ft. 6-in. gauge Kutch State Railway by means of a diamond crossing a few miles outside Gandhidham; this narrow-gauge line connects Bhuj with Kandla and with the opening of the new extension has been absorbed into the Western Railway.

New Port at Kandla

The township of Gandhidham was constructed with the object both of serving the needs of the new port and of housing the many refugees from Sind rendered homeless after Partition. Housing for 12,000 persons has already been provided and the town is expected to develop rapidly with the establishment of a railhead and port facilities. The foundation of the new port was laid on January 10, 1952, by Mr. Jawaharlal Nehru, Prime Minister of India. It is expected that work will be completed in 1955-56 and that rail-borne port traffic will amount to 200,000 tons of oil and 100,000 tons of general cargo annually.

In the districts traversed by the new line there are no proper roads except for about 30 miles near Gandhidham and this is in bad condition. The means of transport was camel or bullock cart, both scarce and dear. A desultory bus service was run between a few important villages. The monsoon covered the roads with mud causing the bus service to cease altogether and progress by bullock cart to

be erratic. The monsoon also cut off the State of Kutch by land from the rest of India. The great lagoon, the Rann of Kutch, becomes a vast inland lake when water is pushed inland by the strong monsoon winds and by the flood waters of the several rivers which discharge into the Rann before entering the sea.

Construction Difficulties

Construction work started in January, 1950. Deesa was the only rail-head available for the supply of material. A short distance away was the Banas River, which, though dry from December to June, became a raging torrent in the monsoon and vast areas west of it were flooded. During the dry months a temporary railway connection was laid across the river bed and a depot established on the other bank. Work on the permanent bridge was carried out as quickly as possible. It was begun in April, 1950, and completed in June, 1951. It consists of 14 spans of 80-ft. plate girders carried over mass concrete piers and founded on single 22-ft. dia. wells. It was opened for construction trains on July 5, 1951.

It was also necessary to supply

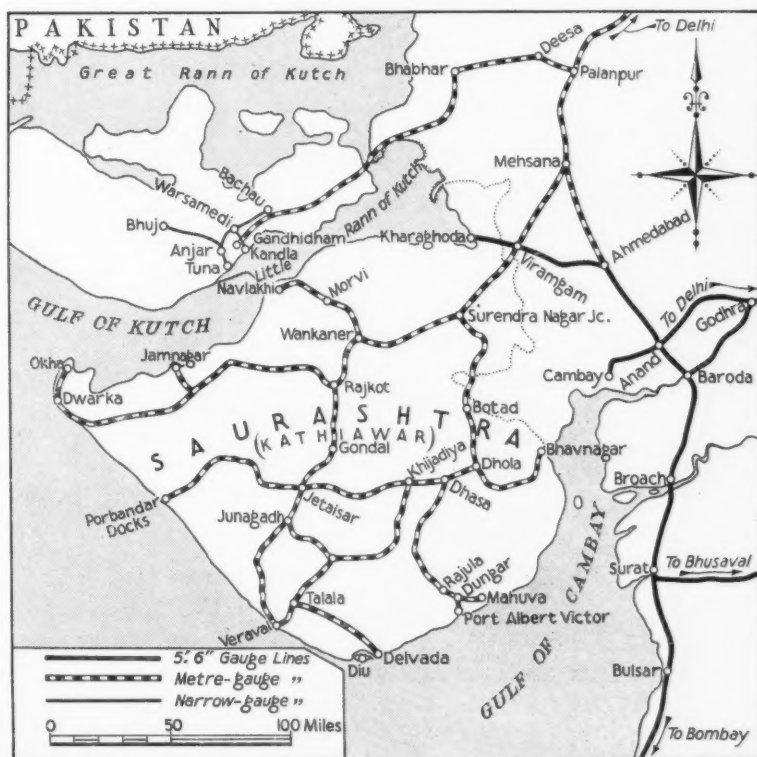
material from the Kandla end, and this came to Navlakhi, a station on the former Saurashtra Railway, and thence across the Gulf of Kutch by barges or country boats. The absence of roads accentuated construction difficulties. Only military type vehicles fitted with front axle drive could be used over the sandy tracks.

The new railway was constructed at a cost of Rs. 567 lakhs and has increased the mileage of the Western Railway to 6,159 miles. The ruling gradient is 1 in 150. There are 311 bridges and 31 stations.

A short length of the new line crosses the Rann of Kutch. The railway embankment crossing the Rann is two miles long and on its southern slope is protected by 2-ft. stone pitching where it is estimated that even during the heaviest floods only 8 ft. of water will stand.

Developing Territory Served

The density of the population of the area through which the line passes varies from 25 persons a square mile in the Rann area to about 100 at the Gandhidham end and 150 at the Deesa end; with the opening of the line travel throughout the area will now be pos-

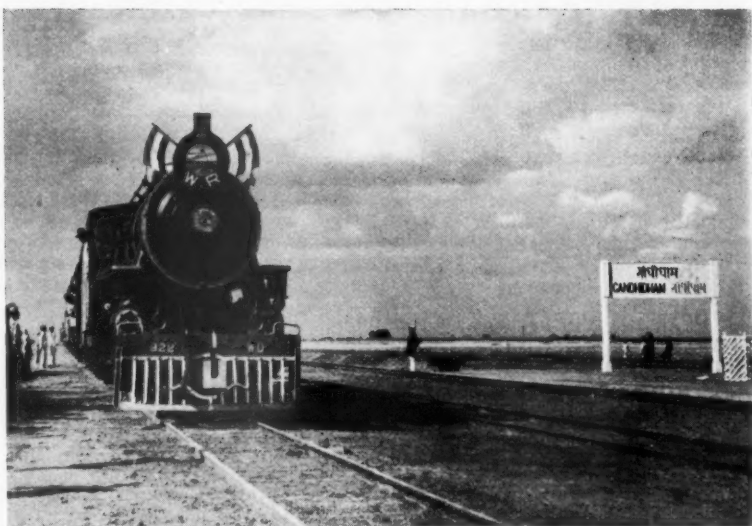


Principal railways in Kathiawar, showing connections between Kandla-Deesa and other metre-gauge lines

sible all the year round. The salt works at Kandla are undertaking an extension to their premises and have approached the railway for the transport of 50,000 tons of salt a year. The railway may also encourage the development of Kutch cattle, claimed to be the best in India; even now ghee is exported from Kutch by air to other parts of India.

Dieselisation

The Kandla-Deesa link has been opened for traffic with steam traction as a temporary measure. It is proposed to dieselise, as the water available is unsuitable for steam locomotives. The use of diesel locomotives has been confined so far to shunting in railway yards in the Dominion of India and the experience gained with this type of locomotive in regular service on passenger and goods trains will be of great value. Diesel locomotives will be economical to operate, particularly with the prospect of oil installations in the Kandla port area.



Inaugural train conveying the President of India entering Gandhidham Station, the present terminus of the Kandla-Deesa line, on October 2, 1952

Train Formation Indicators

System adopted on S.N.C.F.

HAVING been directed to the proper platform for their train, many travellers feel some anxiety over locating the portion and the class of carriage they require in the time available during the station stop. These uncertainties can react on the station staff,

who themselves have duties to attend to in a limited time, and may be impeded by travellers hurrying up and down the platform and asking last-minute questions.

A system of indicators designed to minimise these difficulties for travellers

and staff has been adopted at principal stations of the French National Railways. A typical indicator, actually located at Dijon on the Paris-Lyons electrified main line, is illustrated. It displays a series of diagrams showing the normal make-up of the principal trains calling at the platform concerned.

Interchangeable Strips

Each diagram is printed on a strip that slides into a grooved holder, so that a new one can be substituted readily. The information comprises the train number and destination, and a sketch of the train in which each vehicle is labelled with its destination, class, and description. Restaurant and sleeping cars, and mail and luggage vans are included; also a conventional representation of the locomotive showing whether the train is steam- or electric-hauled. The electric silhouette is more reminiscent of an American locomotive than one of the current French designs.

This information enables travellers to station themselves at the most convenient points along the platform before the train runs in, and reduces the chance of their finding themselves opposite a non-passenger vehicle when it comes to rest.

The train formation indicators have achieved good results in the direction intended, and combined with the standardised forms of loudspeaker announcements now observed all over the S.N.C.F. system are making a useful contribution to the handling of passenger traffic and the satisfactory public relations that spring from the provision of adequate notices.



Board on Platform 1 at Dijon, French National Railways, showing order of vehicles and destinations of principal trains

Air-Conditioned Rolling Stock for Egypt

First class, open type vestibule stock, provide de luxe accommodation on the Cairo-Alexandria day services

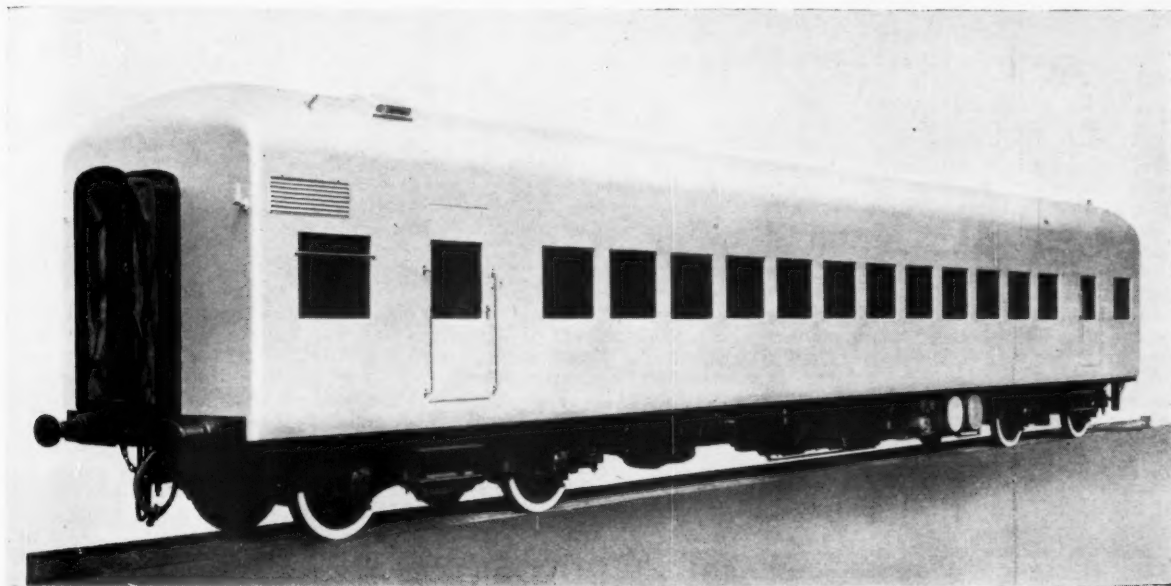
THE Metropolitan-Cammell Carriage & Wagon Co. Ltd. is at present constructing at its Saltley Works ten fully air-conditioned, first-class coaches for the Egyptian State Railways. The coaches are designed specifically with a view to providing de-luxe accommodation on the day services from Cairo to Alexandria, a distance of 125 miles. Their distinctive style and appointments

are in keeping with the high standard of comfort required for services of this kind.

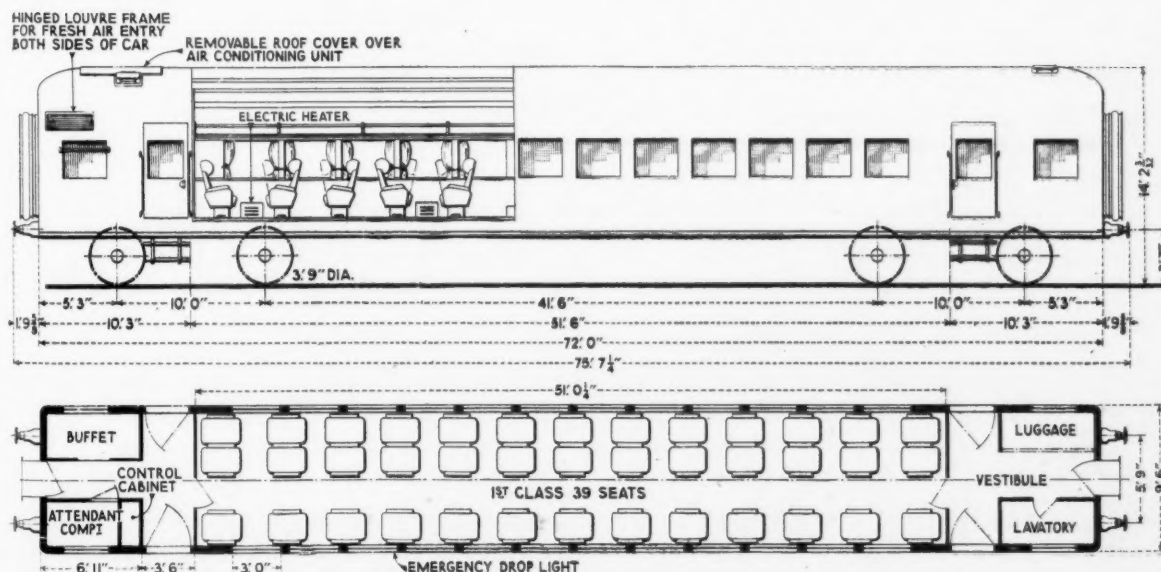
The carriages are of the open type with end vestibules, the saloon providing seating for 39 passengers. A buffet compartment and an attendant's compartment are arranged at one end of the coach, and a luggage compartment and the toilet at the other. Externally, the

coaches are finished in aluminium paint, and to facilitate washing down the body-sides are smooth finished. There are no gutters and the clean appearance is heightened by the flush-fitted entrance doors and the shallowness of the exterior window frames.

Bogies are to E.S.R. standard design of riveted plate frame construction, reinforced by channels and angles. They



Air-conditioned first class coach for Egyptian State Railways



Elevation and plan showing the seating and layout

are 16 ft. over headstocks, with a wheel-base of 10 ft. and are fitted with British Timken roller-bearing axleboxes.

The principal dimensions and other particulars are as follow:—

Gauge	...	4 ft. 8½ in.
Length over headstocks	...	72 ft.
Centres of bogies	...	51 ft. 6 in.
Bogie wheelbase	...	10 ft.
Height from rail to top of roof	...	14 ft. 2½ in.
Tare	...	50 tons 10 cwt.

The underframe is of all-welded construction and basically similar in design to the underframe of the third class and buffet stock built by the firm for the Egyptian State Railways; a description appeared in our June 27, 1952, issue. In the present design the underframe is strengthened to carry the air-conditioning and electric lighting equipment.

Carriage Design

The all-steel body structure is integral with the underframe, the pressed channel section pillars being riveted down the whole depth of the combined solebar web and crib angle. The roof is built as a separate unit of riveted and welded construction and carries the air-conditioning plant and ducts. All panels are of copper-bearing mild steel riveted and seam-welded at the joints; on the bodysides these joints are ground to provide a flush exterior.

Insulation has been given special attention. The whole of the interior surface of the shell is first given a coat of red oxide before being sprayed with Limpet asbestos, applied with emulsion binder. This insulation is ½ in. thick

on the bodysides, ¼ in. thick on the underside of the floorsheets, and 1 in. thick on the roof panels. In addition, all interior finish panels, which are of plastic, are backed with insulation. The bodyside finish panels, of ¼ in. Formica, carry 1 in. thick Celotex contained within timber framing secured to the plastic panels by a thermoplastic adhesive.

The ceiling panels of ¼ in. Waverite, are backed with Fibreglass. The middle portion of the ceiling is 1½ in. thick covered with Sunfol, and at the side portions 1¼ in. thick. Since these form part of the air-conditioning ducts, they are covered with Limpet asbestos sheet 2 mm. thick. The space between the panels at solebar level is filled with granulated cork.

The success of modern railway carriage decoration depends on simplicity of line and balanced colouring; for warm climates cold colours—in this case blue and blue-grey—provide a fresh atmosphere, and the combination of these has been effectively achieved. The saloon gives an impression of space and the design is simple and modern. This appearance is obtained principally by the use of continuous horizontal lines, contrasting with the plastic panels, while the transverse ceiling mouldings tone with the panels.

The most prominent of these lines, running the full length of the saloon, are formed by the curtain pelmets and parcel racks, and the deep extruded aluminium mouldings behind which the

ceiling panels curve down to blend into the bodyside, and which conceal the outlets from the air-ducts in the roof. The faces of these have pronounced longitudinal saw-tooth flutes and gives an impression of length.

The two continuous rows of fluorescent lighting fittings, with reeded Perspex shades, are disposed one on each side of the central arch of the clerestory ceiling. The parcel racks are of the two-tier type, of cast and extruded aluminium, with sprayed aluminium finish. The plastic side panels in the saloon are of lavender grey set off by light blue mouldings.

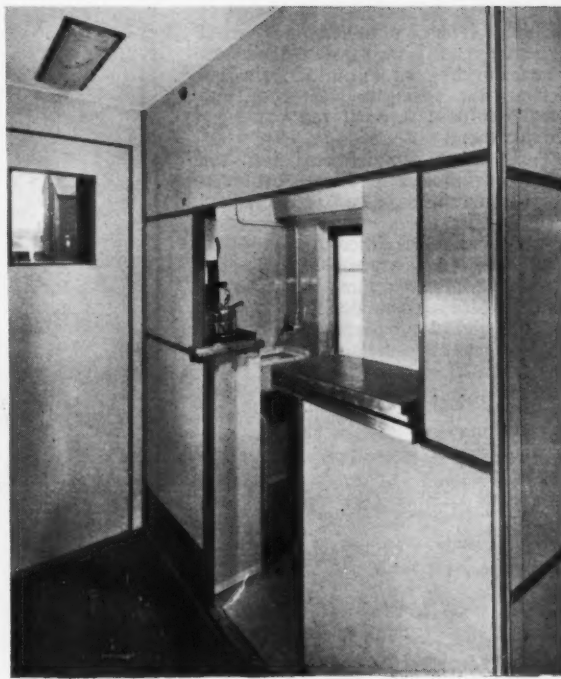
Special attention has been given to provide against sun glare and Insulite full-view windows are fitted consisting of ¼ in. thick Calorex glass and ¼ in. thick plate glass, with ¼ in. dehydrated space between. The unit is sealed with a non-hardening glazing compound.

The seats are the result of a prototype evolved by Metropolitan Cammell and G. D. Peters, with the aim of giving maximum comfort. They have reclining backs, adjustable individually by an actuating knob in the armrest, which also carries a flush-fitting ashtray, and adjustable headrests. Foam rubber cushions are fitted in the seats and moulded rubber in the headrests.

With the exception of the end seats, all seats are arranged to revolve. The mechanism is of cast aluminium with wearing parts of phosphor bronze, and is arranged for grease lubrication. The fitting is flush with the floor and seats



Interior of the compartment showing the seating and fluorescent lighting arrangements

*Interior of the toilet compartment**Buffet compartment showing serving hatch*

can be removed without interfering with the mechanism.

The seats are trimmed with uncut moquette in a dark blue shade matching the carpet, kicking panels and curtains, which provides a pleasant harmony with the lighter blue of mouldings and window frames. The carpet covers the whole floor of the compartment and is laid on linoleum which in turn rests on a thick layer of cork.

Plastic covered tables hinge up from the bodyside, and a bell-push for service, with an indicator lamp, are fitted at each seat position. Unusually wide entrance doors are provided and the vestibules are roomy and attractively finished. The decorative scheme is entirely of plastic panels in buff linette with mouldings of light blue; the attendant's compartment is similar. Rubber flooring is laid in these areas, with sunk mats at the entrances to the saloons.

The toilet is finished in plastic panels, of blue onyx, with similar light blue mouldings. The fittings, which include a pedestal type washbasin and hopper, are in jubilee blue. Water supply is by roof tanks of 300 gal. capacity. Glass shelves are fitted and provision is made for clean and soiled towels. There are two mirrors, one over the washbasin and the other, a $\frac{3}{4}$ -length pier glass, on the door. Also included is a leather-trimmed stool in satin silver finish; the toilet has terrazzo floor.

The luggage compartment, opposite the toilet, is intended only for heavy baggage, and is secured by a collapsible gate. The buffet equipment is conveniently arranged and includes a $6\frac{1}{2}$ cu. ft. capacity refrigerator with a tap for

iced water and a separate compartment for ice-blocks, a small electric hot plate, sink, and draining board.

Air-Conditioning

The air-conditioning equipment of Stone-Carrier design is automatic in operation, and designed to cater for the varying climatic conditions in Egypt. The equipment provides an adequate supply of fresh and filtered air, which is warmed or cooled and dehumidified to maintain constant conditions inside the carriage, irrespective of climatic variations.

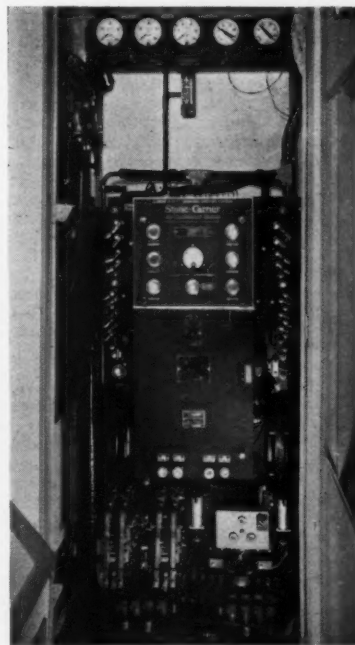
The power required for operating the air-conditioning equipment and auxiliaries is provided by the combined d.c. generator and a.c. motor. The unit is totally enclosed and driven through vee-belts from the axle pulley, gearbox, propeller shaft, and centrifugal clutch. The standard voltage is 110 V. a.c., which facilitates using fluorescent lighting.

A battery of accumulators maintain electrical services during normal operations. To provide power for pre-cooling, pre-heating and so on, while the stock is stationary at terminal stations, arrangements are provided by which means an external a.c. power supply can be plugged in. The combined generator and motor is started by means of the automatic starting switchgear.

Air cooling and dehumidification is by means of mechanical refrigeration. Heating is effected by electric heating elements incorporated in the air-conditioning roof unit and by electric heating units at floor level. The overhead heaters warm the air drawn in from outside, while the floor heaters compensate for heat losses through the

body of the carriage. Temperature control inside the carriage is automatic, and is maintained within close limits by specially designed thermostats.

Outside air is drawn through filters and mixed with a proportion of filtered air returned from the conditioned space and passes through the air-conditioning

*Control cabinet of the Stone-Carrier air-conditioning equipment*

unit, cooled, dehumidified or heated as required. The conditioned air is forced by multivane centrifugal fans incorporated in the roof unit into an air duct between the ceiling and the roof, and evenly diffused through the passenger compartment.

Part of the air delivered into the carriage is allowed to escape to atmosphere, but a slight pressure is maintained inside the carriage. The refrigeration employed can be either Arcton 6, or Freon 12. The characteristics are identical and well suited to railway air-conditioning, being practically odourless, non-toxic, and non-inflammable, and have no corrosive action on most common metals.

Principal Contractors

The following is a list of the sub-contractors who are supplying materials for the new stock:—

Axleboxes ...	British Timken Limited
Vacuum brake equipment	Consolidated Brake & Engineering Co. Ltd.
Passenger communication equipment	Passenger Communication Company
Electric lighting and air-conditioning	J. Stone & Co. (Deptford) Ltd.
Limpet asbestos ...	J. W. Roberts Limited
Emergency window gear...	Rawlings Manufacturing Co. Ltd.
Insulight windows ...	Pilkington Bros. Ltd.
Rotating seats and Celotex	G. D. Peters & Co. Ltd.
Lavatory flushing equipment	John Levick Limited
Washbasin and hopper ...	Twyford Limited
Rubber flooring ...	Ioco Limited
Plastic panels ...	Warerite Limited and Thomas De La Rue & Co. Ltd.
Aluminium mouldings ...	Metal Mouldings Limited, I.C.I. (Metals) Ltd., British Aluminium Co. Ltd., Northern Aluminium Co. Ltd.
Springs ...	English Steel Corporation Limited
I.R. Springs ...	Geo. Spencer, Moulton & Co. Ltd.
Gangway diaphragms	A. G. Wild & Co. Ltd.
Paint ...	Docker Brothers and Postans & Morley Limited



The luggage compartment, showing the folding gate

BRITISH STANDARD FOR HOSE COUPLING.—A new British Standard has been issued covering hose couplings for air and water for working pressures not exceeding 150 lb. per sq. in. The standard deals with workmanship, interchangeability, and hydraulic testing of these couplings. Details of materials and screw threads are also given. Illustrations of the couplings are given, together with full dimensional particulars. This standard is complementary to B.S. 1782, "Hose couplings (1½ in. to 8 in. nominal sizes) other than fire hose couplings." Copies of this standard may be obtained from the British Standards Institution, Sales Branch, 24, Victoria Street, London, S.W.1. Price 10s.

ALUMINIUM PRODUCTION.—With the expiry on December 31 of the contract between the Ministry of Materials and the British Aluminium Co. Ltd., it has been decided to discontinue the arrangement under which the Ministry bought the company's output of virgin aluminium for resale along with imported metal. Most of the metal produced will be used in the company's own works, but it has been agreed to continue to supply other users who require the company's metal for special purposes, and such sales will be licensed by the Ministry of Supply in accordance with any distribution scheme for the time being in operation. The company will sell at prices not exceeding the Ministry of Materials current prices for imported aluminium.

Annual production of virgin metal by the British Aluminium Co. Ltd. is of the order of 30,000 tons. Total United Kingdom consumption of virgin metal is about 200,000 tons a year. Virgin aluminium is subject to allocation by the Ministry of Supply. The British Aluminium Company's production and sales of the metal will be taken into account when imported metal is allocated.

INDUSTRIAL WELFARE SOCIETY.—An increased number of one-week courses and day meetings has been planned by the Industrial Welfare Society for 1953, together with a series of residential conferences lasting four or five days each. Details of the programme are obtainable from the Assistant Director (General Services), Industrial Welfare Society (Inc.), 48, Bryanston Square, London, W.1.

PRODUCTION OF RESISTANCE WELDED BOILER TUBES.—A film illustrating the electric resistance weld method of producing tubes for many applications has been produced for Stewards and Lloyds Limited by Ace Distributors, and is available for 16 mm. sound and 35 mm. sound projectors. The process was the subject of an illustrated article in our July 18, 1952, issue. Steel tubes made by electric resistance welding are being used on an increasing scale for locomotive boilers, an application represented in the film. For this and other purposes calling for a high-quality tube

the weld is required to be as strong as the parent metal. Developments in the electric resistance welding process have helped in meeting these conditions, and the tubes will pass every test required by seamless specification. The film emphasises the further contributions to consistency and quality made by the production of steel for the tubes from the company's own ores in its own steelworks.

ANGLO-FRENCH EXCHANGE STUDY VISITS.—The French National Railways draw attention to the facilities for exchange visits of young people aged 13-25 (or over) between British and French families under the auspices of their headquarters staff office (S.N.C.F., Service Central du Personnel, 36 Rue de Leningrad, Paris, 8e.) and of the Regional Staff Officers of British Railways. Arrangements are made by the S.N.C.F. in France in conjunction with the "Office des Universités et Ecoles Françaises," with the "Fédération Internationale des Organisations de Correspondances et d'Echanges Scolaires" and with the "Office du Tourisme Universitaire." In the case of all grades of British Railways staff, the S.N.C.F. grants free travel in France. British children are met by the head of the French family on arrival at the Paris terminus or, if desired, at the French port. Reference to exchange visits between British and French railway traffic and technical staff last year was made in our issues of May 2 and June 13, 1952.

British Railways 2-6-0 Standard Class "4" Locomotives

*Designed for mixed-traffic operating
with maximum route availability*

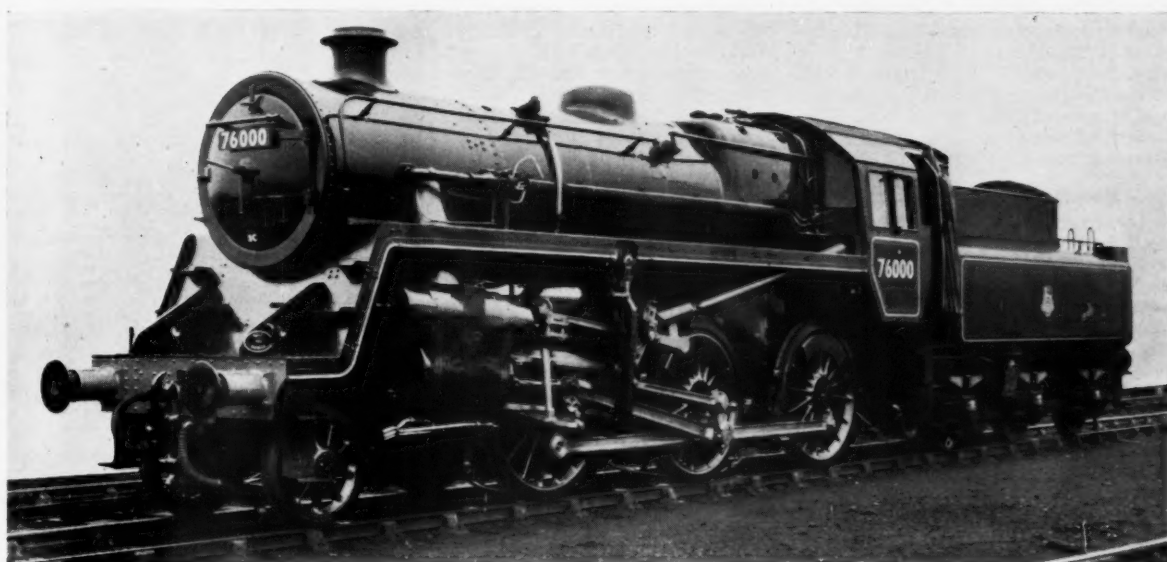
BRITISH RAILWAYS have recently completed at Horwich the first of 25 class "4" locomotives of the 2-6-0 type. The engines, being built at Horwich and Doncaster, will be numbered 76000 to 76024, and on completion will be allocated as follows: Scottish Region, 76000 to 76004; Southern Region, 76005 to 76019; North Eastern Region 76020 to 76024. The locomotives have been designed and built under the direction of Mr. R. A. Riddles, Member for Mechanical & Electrical Engineering, Railway Executive, while the parent office for the design is Doncaster.

The leading particulars are as follow:—

Cylinders (2), dia. and stroke	17½ in. by 26 in.
Wheels coupled, dia.	5 ft. 3 in.
" pony truck, dia.	3 ft.
" tender, dia.	3 ft. 3½ in.
Wheelbase, coupled	15 ft. 4 in.
" engine	24 ft. 1 in.
" engine and tender	46 ft. 11½ in.
Heating surface:	
Tubes	1,061 sq. ft.
Firebox	131 sq. ft.
Total evaporative	1,192 sq. ft.
Superheater	254.3 sq. ft.
Grate area	23 sq. ft.
Boiler pressure	225 lb. per sq. in.
Tractive effort	24,170 lb.
Adhesion factor	4.59
Weight of engine in working order	59 tons 2 cwt.
" tender in working order	42 tons 3 cwt.
" engine and tender in working order	101 tons 5 cwt.

Designed for mixed-traffic operating with maximum route availability, the locomotives have much in common with previous British Railways standard designs. The boiler is somewhat similar to the L.M.R. class "4" 2-6-0, the same flange plates being common to both, as is the working pressure of 225 lb. per sq. in. The tender is similar in design and is interchangeable with the standard class "4" 4-6-0 locomotives built at Swindon, which were described and illustrated in our June 29, 1951, issue.

The shell plates are of ordinary quality steel, the barrel consisting of two rings, the second being tapered. These



British Railways standard class "4" locomotive, 2-6-0 type

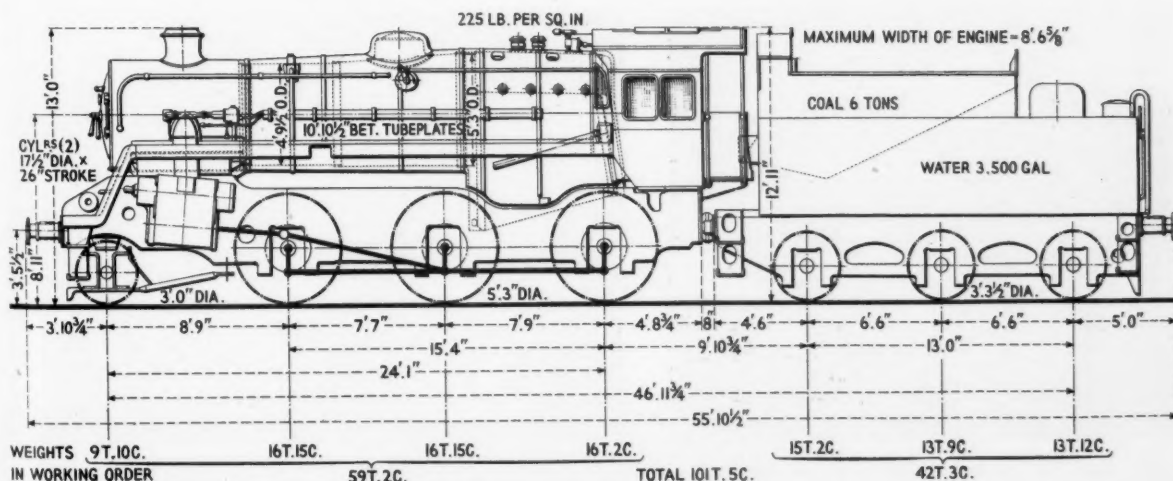


Diagram giving principal weights and dimensions

two rings are rolled from $\frac{5}{8}$ in. and $\frac{1}{8}$ in. thick plates respectively, outside diameters being 4 ft. 9 $\frac{1}{2}$ in. at the front, and 5 ft. 3 in. at the firebox end. A smokebox tubeplate of the drumhead type, $\frac{3}{4}$ in. thick is used, with provision for 24 large flue tubes, 5 $\frac{1}{2}$ in. outside dia. \times 7 s.w.g. thick and 154 small tubes 1 $\frac{1}{8}$ in. outside dia. \times 12 s.w.g. thick. The length between tubeplates is 10 ft. 10 $\frac{1}{2}$ in.

A slide valve type regulator is fitted into the dome and operated by an external pull rod connected to a transverse shaft which works through a stuffing box on the second barrel plate. The boiler mountings, manifold, safety valves, clack valves, and so on, are as fitted to other standard British Railways locomotives with their controls operated in a similar manner. The Belpaire firebox is 7 ft. 6 in. long and 4 ft. 6 $\frac{1}{2}$ in. wide, with a $\frac{9}{16}$ in. thick steel wrapper plate and vertical $\frac{1}{8}$ in. thick throat plate. A copper inner firebox with $\frac{5}{8}$ in. thick wrapper plate and 1 in. thick tubeplate is fitted. All firebox water space stays are of Monel metal and fitted with steel nuts inside the firebox; longitudinal and transverse stays are of steel. The boiler and firebox are lagged with Fibreglass mattresses.

Rocking Grate Construction

The rocking grate is in two halves, each half consisting of three rocking sections, with 14 renewable firebars in each section. Each half grate can be rocked separately from the footplate and for two different travels as on other British Railways standard engines. A two hopper, self emptying ashpan is fitted, having butterfly doors operated

by a hand lever from ground level and its damper doors, fore and aft, being controlled separately by standard hand wheels and screw gear. The smokebox is of the self cleaning, cylindrical type and cradled by a fabricated saddle. The blast pipe has the standard type plain circular cap, with a 4 $\frac{1}{8}$ in. dia. nozzle incorporating the blower ring.

Frames and Motion

The main frames are of 1 $\frac{1}{2}$ in. thick plates, spaced 4 ft. 1 $\frac{1}{2}$ in. apart, and well braced both horizontally and vertically by fabricated plate stays. Pin jointed cross stays are attached to each of the axlebox guides, both the guides and axleboxes being fitted with manganese-steel liners; those on the guides being bolted in position and the others welded to the axleboxes.

The engine has plain bearings on all wheels, pressed-in white metal brasses in cast-steel axleboxes for the coupled axles, and for the pony truck boxes, white metal bronze castings. The pony truck, springs and brakegear are of standard design, also the method of carrying the boiler hind end by brackets on the dragbox. The fabricated dragbox also carries the steam brake cylinder and the brackets for the brake shaft.

The two outside cylinders are 17 $\frac{1}{2}$ in. dia. \times 26 in. stroke, and are of cast steel with cast-iron barrel liners. The 10 in. diameter piston valves have a steam lap of 1 $\frac{1}{2}$ in. and a lead of $\frac{1}{4}$ in., and are operated by valve gear of the conventional Walschaerts type, giving a maximum travel in full gear of 6 $\frac{1}{4}$ in. and a cut-off of 75 per cent.

The motion itself follows very closely

that of the class "3" tank engines having the same valve events diagram, and many parts are used on both engines. As on all other British Railways standard locomotives to date, the lubrication of motion pins and reversing gear is by grease nipple and gun. Cylinder and valve chest lubrication is by atomised oil, delivered by mechanical lubricators.

Standard steam operated cylinder cocks are used and the cylinder covers are fitted with relief valves. Provision is made for the reversing screw on the L.H. reversing shaft bracket which is operated by the end-on hand wheel in the cab, which is of British Railways standard design.

Tender Capacities

The tender has a water capacity of 3,500 gal. and carries 6 tons of coal and is designed with provision for water pick-up gear, but the external equipment is not fitted to these particular locomotives.

The following is a list of the principal suppliers of equipment provided for these locomotives:—

Vacuum brake ejector, driver's brake valve, graduable steam brake valve and associated brake details	Gresham & Craven Limited
Roller bearings on tender	British Timken Limited
Self-aligning ball bearings for valve gear return cranks	Skefco Ball Bearing Co. Ltd.
Buffers	Geo. Turton, Platts & Co. Ltd.
Fibreglass insulating mattresses for boiler and firebox	W. Gilmour Smith & Co. Ltd.
Manually-operated blow down valve	Everlasting Valve Co. Ltd.
Mechanical lubricators	C. C. Wakefield & Co. Ltd.
Superheater elements	The Superheater Co. Ltd.
Reversing transmission shaft	Hardy Spicer & Co. Ltd.

Marshalling Yard Lighting in France

(See editorial note on page 2)



Two views of the marshalling yard at Le Bourget, French National Railways, illuminated by floodlights on towers. One of the towers is seen in the right-hand illustration. Good lighting between rows of wagons and freedom from obstructions on the ground are advantages that have led to this system being widely used in France

RAILWAY NEWS SECTION

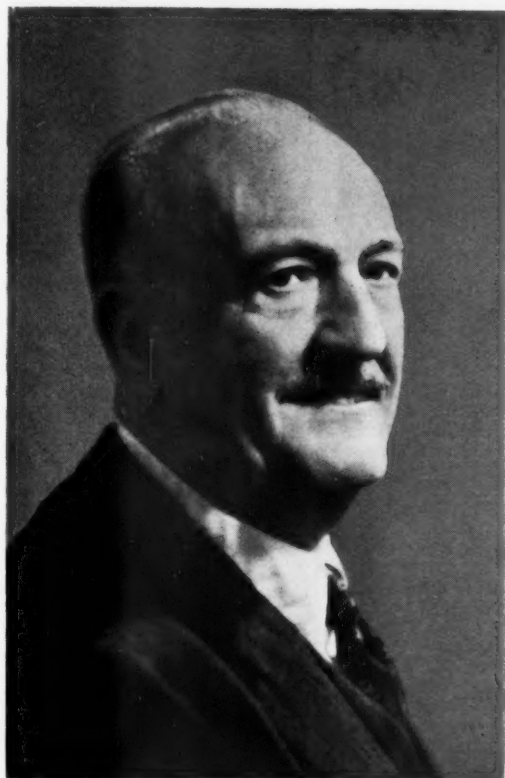
PERSONAL

Mr. Alfonso Pena Boeuf, who, as recorded in our December 5 issue, has been appointed President of the Spanish National Railways, was born in Madrid on January 23, 1888. In 1913 he completed his education at the Special School of Roads, Channels & Harbours. The first project on which he was engaged was the Goizueta road bridge. Subsequently he

Committee, Commander A. J. O'Brien Twohig, Dublin Port & Docks Board; Messrs. D. Stuart, C.I.E.; W. J. Gleeson, Electricity Supply Board; T. F. Brazil, C.I.E.; P. T. Sheridan, C.I.E.; J. H. Scott, Odlums Ltd.; M. Stuart Shaw, Assistant General Manager, Aer Lingus; and Prof. W. H. Prendergast, Engineering Department, U.C.D.

This section of the Institute is to cover the entire territory of the Republic of Ireland.

We regret to record the death on December 22 of Mr. C. G. W. Cordon, C.I.E., who was Agent & General Manager, Madras & Southern Mahratta Railway from 1938 to 1944, and General Manager of the same system from 1944 to 1945. Mr. Cordon began his railway career in 1902 on the former Great Northern Railway, and subsequently occupied various positions on the following overseas railways: Beira, Mashonaland and Rhodesia



Mr. Alfonso Pena Boeuf
Appointed President, Spanish National Railways



The late Mr. C. G. W. Cordon, C.I.E.
General Manager, Madras & Southern Mahratta Railway, 1938-45

undertook a number of industrial building works and the construction of houses in Madrid and Seville, as well as the Tardienta aqueduct and the coffer dam of the Generalissimo Dam. Since 1920 he has been a Professor of the Roads School in the chair of Elastic Mechanics & Reinforced Concrete. He was Minister of Public Works from February 1, 1938, to July 21, 1945.

INSTITUTE OF TRANSPORT

An Irish section of the Institute of Transport has been formed in Dublin. The following officers were elected:—

Chairman, Mr. T. C. Courtney, Chairman, Coras Iompair Eireann.

Vice-Chairman, Mr. G. B. Howden, General Manager, Great Northern Railway (Ireland), C.I.E., and Mr. F. Lemass, Chief Officer, C.I.E.

Hon. Secretary, Mr. R. L. F. Woodhouse, Arthur Guinness Son & Co. Ltd. (Dublin).

Hon. Treasurer, Mr. J. O'Leary, C.I.E. (retired).

Mr. A. M. Rizk has been appointed General Manager, Egyptian State Railways. Mr. Rizk is at present on a visit to the United Kingdom.

Mr. R. J. Hillard, C.M.G., whose impending retirement from the General Managership of the Sudan Railways was recorded in our May 23, 1952, issue, has now left the Sudan after nearly 27 years' service with the Sudan Government. A portrait and biographical detail of Mr. Hillard were published in our May 23 issue.

We regret to record the death on December 23, at the age of 78, of Professor A. H. Jameson, Emeritus Professor of Civil Engineering in the University of London. Professor A. H. Jameson was at one time a draughtsman on the staff of the Lancashire & Yorkshire Railway and later served as Assistant to the Resident Engineers to the company at Halifax and Wakefield.

(1907-11); Lagos Government (1911-12); Cuban Central (1912-13). He joined the Madras Southern Mahratta Railway in May, 1914 as Assistant Traffic Superintendent. During the 1914-18 war he served on railways with the Mesopotamia Expeditionary Force. Rejoining the M.S.M.R. after the war, he was appointed District Traffic Superintendent, and then Deputy Traffic Manager, Commercial & Movement. He also held the posts of Statistical Officer, Chief Controller of Stores, Deputy General Manager, and then Chief Commercial Manager. He was appointed Agent & General Manager in 1938. In 1937 he officiated as Director of Traffic, Railway Board, and subsequently was placed on special duty in the office of the Board in connection with the report of the Indian Railway Inquiry Committee. Mr. Cordon was President of the Indian Railway Conference Association, 1943-44, and was made a C.I.E. in 1942. He was later Director General, Railways, Control Commission for Germany.



The late Mr. E. S. Hadley

A pioneer of industrial safety
in this country



Mr. J. A. R. Horsley

Appointed Head of Freight Development Section,
Commercial Superintendent's Office, York,
N.E. Region



Mr. P. G. Price

Appointed District Goods Superintendent
Bolton, London Midland Region

We regret to record the death on December 18 of Mr. Edward S. Hadley, who, from 1919 until 1937, was Editor of the *Great Western Railway Magazine*. Mr. Hadley was a well-known Great Western Railway personality. From 1890 he served the G.W.R. for forty-eight years, about twenty of which were spent in traffic positions in South Wales, and the remainder in the General Manager's Office at Paddington. In 1919 he became the Editor of the *G.W.R. Magazine*, in which capacity he succeeded Sir Felix Pole. Mr. Hadley retired from the railway in 1937, and joined Associated Electrical Industries, Limited, as Editor of *A.E.I. News*, which post he relinquished in February, 1946. He will be remembered mainly for some outstanding innovations that he made. In his early days he conceived the G.W.R. freight traffic control system, and installed it on the branch lines serving the Monmouthshire Valleys. Later he was sent by the Superintendent of the Line to inaugurate that system in London, Bristol, Westbury, and Birmingham districts, and it has continued in operation. Over twenty years ago he founded the G.W.R. Social & Educational Union (since renamed the G.W.R. Staff Association) and the "Helping Hand" Fund, both flourishing whole-line organisations today. In 1913, in collaboration with Sir Felix Pole, he started the "Safety" movement in this country, and thus planted the sapling which has grown into the Royal Society for the Prevention of Accidents. Mr. Hadley was the author of several books, which include "Railway Working and Appliances," "The Shunter's Manual," a number of works on accident prevention, and others on a variety of subjects.

Mr. J. A. R. Horsley, who, as recorded in our December 5 issue, has been appointed Head of Freight Development Section, Commercial Superintendent's Office, York, North Eastern Region, entered the service of the former Great Western Railway as a junior clerk at Liverpool Road Goods Depot, Manchester, in 1916. Six years later he was transferred to the Manchester District Traffic Manager's Office, and subse-

quently appointed First Assistant in the General Section of that office. In 1933 he was transferred to Slough, and the following year went to the Chief Goods Manager's Office, Paddington, where he was employed in various capacities, including four years as Personal Clerk to the then Chief Goods Manager (the late Mr. A. Maynard). At the beginning of 1942, Mr. Horsley was appointed Goods Agent at Lye and twelve months later was transferred to Avonmouth Docks as Assistant Goods Agent, with special duties relating to the then impending arrival of U.S. Forces and Stores in this country. He returned to H.Q. Paddington as Chief Clerk to the Road Transport Controller in 1945, and two years later was appointed Assistant District Goods Superintendent, Paddington, which position he vacates to take up his new duties. During the past four years Mr. Horsley has taken an active part in the planning and conducting of educational courses for cartage and terminal supervisors. In 1949 he took charge of the Western Region courses and since 1950 has conducted the annual inter-regional series sponsored by the Railway Executive.

Mr. T. S. Lascelles has been appointed Managing Director of W. R. Sykes Interlocking Signal Co. Ltd., and Mr. F. J. Sykes has succeeded him as Director & General Manager. Mr. Norman G. Kershaw, hitherto Mechanical Development Engineer, Westinghouse Brake & Signal Co. Ltd., has been appointed Assistant General Manager, W. R. Sykes Interlocking Signal Co. Ltd. These changes took effect on January 1, 1953. As from the same date Mr. C. W. Richardson, Assistant Engineer, W. R. Sykes Interlocking Signal Co. Ltd., has joined the staff of Whitelegg & Rogers Limited.

Mr. P. G. Price, Assistant District Goods Superintendent, Leeds, North Eastern Region, British Railways, who, as recorded in our December 19 issue, has been appointed District Goods Superintendent, Bolton, London Midland Region, joined the former L.N.W.R. as a probationer in 1918. After holding

various positions at L.M.S.R. headquarters in the Commercial and Operating Departments, Mr. Price became Goods Agent, Wednesbury, in 1937, followed by similar appointments at Dudley in 1938 and Burton-on-Trent in 1942. He became Assistant District Goods & Passenger Manager, Derby, in 1946 and a year later was appointed to a similar post at Leeds. After nationalisation, when the regional boundaries were adjusted in 1950, the Leeds area organisations of the former L.M.S.R. and L.N.E.R. were merged, and Mr. Price became Assistant District Goods Superintendent, Leeds, North Eastern Region, which post he now vacates.

LONDON MIDLAND REGION STAFF CHANGES

The following staff changes are announced by British Railways, London Midland Region:—

Mr. J. K. Bryant, Acting Civil Defence Officer, Chief Regional Officer's Department, Euston, to be Assistant (Traffic Services), Chief Regional Officer's Department, Euston.

Mr. J. H. Conway, Works Accountant, Derby, to be Assistant to Accountant (Mechanical & Electrical and Carriage & Wagon Accounts), Derby.

Mr. J. L. Evans, Assistant to District Goods Superintendent, Wolverhampton, to be Assistant District Commercial Superintendent, Stoke.

Mr. A. Snelgrove, Goods Agent, Stoke, to be Assistant to District Goods Superintendent, Birmingham L.M./W.R.

Mr. T. R. Chapelhow, Assistant Divisional Controller, O.S.O. Crewe, to be Assistant District Operating Superintendent, Liverpool, Lime Street.

Mr. G. W. Whipp, Goods Agent, Liverpool Park Lane, to be Assistant to District Goods Superintendent, Liverpool.

Mr. H. W. Warwick, Yardmaster, Colwick, to be Stationmaster, Leicester Central (i/c Leicester, Belgrave Road).

Mr. J. S. Gavan, Stationmaster, Wigan (N.W.) i/c Wigan, Wallgate, to be Stationmaster, Blackburn.

Mr. F. W. Beebe, Yardmaster, Salford (Windsor Bridge), to be Stationmaster, Bolton (Trinity Street).

Mr. W. Holmes, Stationmaster/Goods Agent, Middlewich, to be Stationmaster, Warrington (Bank Quay), also i/c Warrington Low Level and Arpley.

Mr. A. B. Mitchell, Deputy Chief Controller, Birmingham, (Mid), D.O.S.O., to be Yardmaster, Bletchley.

Mr. G. O. S. Scotcher, Chief Clerk, Derby St. Mary's to be Goods Agent, Longton.

We regret to record the death of Dr. E. H. Hunt, M.A., M.Ch., F.R.C.S., former Chief Medical Officer, Nizam's State Railway.

PRESENTATION TO LT.-COLONEL H. B. EVERARD

On December 16 at the Railway Executive Headquarters Lt.-Colonel H. B. Everard, D.S.O., A.M.I.C.E., was presented with a piece of plate by Mr. Ian R. Frazer (Civil Engineer, Scottish Region), on behalf of the Members of the Civil Engineers' Committee. Colonel Everard, who is Chief Officer, Engineering (Maintenance), Railway Executive, as recorded in our December 5 issue, has been released by the R.E. (with the approval of the British Transport Commission), and is to take up the appointment of General Manager, Rhodesia Railways, on January 16. Those present, in addition to Mr. J. C. L. Train (Chairman of the Civil Engineers' Committee) and Mr. Frazer, were:—

Messrs. J. I. Campbell (Civil Engineer, Eastern Region), F. E. Campion (Civil Engineer, Southern Region), Dr. F. F. C. Curtis (Architect, The Railway Executive), Messrs. A. Dean (Civil Engineer, North Eastern Region), J. Ratter (Chief Officer Engineering (Works), The Railway Executive), M. G. R. Smith (Civil Engineer, Western Region), J. Taylor-Thompson (Civil Engineer, London Midland Region).

Also associated with the presentation, although not present at the ceremony, was Mr. P. Croom-Johnson, Chief Engineer of the London Transport Executive.



Mr. Ian R. Frazer, Civil Engineer, Scottish Region (right), making a presentation to Lt.-Colonel H. B. Everard on behalf of the Civil Engineers' Committee to mark Colonel Everard's appointment as General Manager, Rhodesia Railways

The New Year's Honours List

The following is a selection of honours of transport and industrial interest from the New Year list:—

Baron

Sir Clive Latham Baillieu, K.B.E., C.M.G. He is Chairman of the Dunlop Rubber Co. Ltd., and a Past President of the Federation of British Industries.

G.B.E.

Lt.-Colonel the Right Hon. John Theodore Cuthbert, Baron Brabazon of Tara, M.C. For services to Civil Aviation. He was Minister of Transport from 1940-41, and is Chairman & Managing Director of Associated Commercial Vehicles Limited. He is also a Director of the David Brown Corp'n. Ltd.

K.B.E.

Sir Robert Macdonald Gould, C.B., D.S.O., Chief Industrial Commissioner, Ministry of Labour & National Service.

Knights Bachelor

Mr. John Benstead, C.B.E., Deputy Chairman, British Transport Commission.

Mr. Alfred George Ernest Briggs, Deputy Controller of Supplies, Ministry of Supply, and formerly a Director of the English Steel Corporation.

Dr. H. Roxbee Cox, Chief Scientist, Ministry of Fuel & Power.

Mr. Arthur Croft, formerly part owner of Crofts Engineers (Holdings) Limited.

Mr. Matthew Watt Drysdale, Chairman of Lloyd's.

Mr. Lincoln Evans, General Secretary of the Iron & Steel Trades Confederation, and Chairman of the T.U.C. Economic Committee.

Mr. John Bewley Greaves, C.M.G., C.B.E., Senior Trade Commissioner in the Commonwealth of Australia Board of Trade.

Mr. Charles Kenneth Felix Hague, Deputy Chairman and Managing Director, Babcock & Wilcox Limited, Deputy Chair-

man, Royal Ordnance Factories Board. Mr. William Henry Pilkington, Chairman, Pilkington Bros. Ltd.

C.B.

Mr. William Henry Glanville. He is Director of Road Research at the Department of Scientific & Industrial Research.

C.M.G.

Mr. Herbert Somerville Smith, D.S.O., O.B.E., M.C., Comptroller-General, Export Credits Guarantee Department.

C.V.O.

Mr. Sydney William Smart, Superintendent of Operation, Southern Region, British Railways.

C.B.E.

Captain Kenelm Joseph Godfrey Bartlett, Deputy Chairman, European Purchasing Commission, Ministry of Supply.

Mr. Edwyn Ernest Hope Bate, M.B.E., M.C., Chief Works Engineer, Ministry of Works.

Mr. Herbert Arthur Cruse, Director & General Works Manager, Westinghouse Brake & Signal Co. Ltd.

Mr. Arthur Keller Davis, M.C., Assistant Secretary, Ministry of Supply.

Mr. Bonner William Arthur Dickson, former Director and General Manager, Vickers-Armstrongs Limited.

Mr. Thomas Haworth, Chief Accountant, Port of London Authority.

Mr. Albert James Manson, M.B.E., Assistant Secretary, Ministry of Supply.

Mr. Edward Moreland Parsey, Assistant Solicitor, Board of Trade.

Mr. John Nelson McMillen, formerly Chairman, Northern Ireland Tourist Board.

Mr. Alfred Read, M.B.E., Director and Secretary, Powell Duffryn Limited.

Mr. John Arthur Smale, A.F.C., Engineer-in-Chief, Cable & Wireless Limited.

Mr. Frederick Varty Spark, Chief Accountant, Secretary and Director, Harland & Wolff Limited.

Mr. Arthur Henry Topham, Joint Managing Director, Mawdsley's Limited.

Mr. Frederick Gordon Tucker, O.B.E., T.D., Chairman, Licensing Authority, South-Eastern Traffic Area, Ministry of Transport.

Mr. Leonard Charles Tyte, Deputy Chief Scientific Officer, Ministry of Supply.

Mr. Samuel Arthur Henry Whetmore, formerly Joint Managing Director, Billingham Division, Imperial Chemical Industries Limited.

Mr. Henry Albert Wilkinson, M.C., Assistant Secretary, Board of Trade.

O.B.E.

Mr. John Wilson Drinkwater, Assistant Director of Engine Research, Ministry of Supply.

Mr. Graham Llewellyn Hopkin, Senior Principal Scientific Officer, Ministry of Supply.

Mr. Ieuan Maddock, Principal Scientific Officer, Ministry of Supply.

Mr. Charles Joseph Mays, Schedules Superintendent (Road Transport), London Transport Executive.

Mr. Ernest Harold Mott, Senior Principal Scientific Officer, Ministry of Supply.

Mr. Henry Richard Priday, M.B.E., J.P., Regional Secretary, Transport & General Workers' Union, Bristol.

ACCIDENT ON MOGYANA RAILWAY, BRAZIL.—It is reported from Rio de Janeiro that on December 25 a train on the Mogyana Railway was derailed near Mogyguassu and fell into a river.

Parliamentary Notes**Transport Bill Committee Stage***Clauses relating to future of staff of B.T.C. and Executives*

On Clause 27 (Compensation to officers and servants), Sir Ralph Glyn (Abingdon—C.), when discussion of the Transport Bill was resumed in Committee on December 18, moved an amendment to ensure that officers and servants of the B.T.C. who might be employed in one or other of the Executives should be adequately covered as to compensation in the event of any change that took place.

Mr. H. A. Watkinson (Parliamentary Secretary, Ministry of Labour) said the Government hoped that in an expanding transport industry there would be jobs for all, but some people would have to change their jobs. Machinery was needed to enable workers to switch from one job to another. The whole services of the Ministry of Labour would be available for those displaced from the railways or road transport. The Ministry would try to arrange advance notification to employment exchanges so that preparation for finding new jobs could begin in good time. The Ministry, he added, would set up special sections of the appointments branch for dealing with senior members of staffs. On all matters the Ministry would consult all trade unions concerned. It would sympathetically consider before the Report Stage the whole matter raised by the amendment.

Redundant Railwaymen

Mr. J. A. Sparks (Acton—Lab.) said that the scheme of compensation should cover railwaymen whose positions were likely to become redundant as a result of the railways losing traffic to road hauliers.

Mr. Watkinson said the regulations would be drawn up in close consultation with the unions, and any hard cases would go to tribunals set up by the Ministry of Labour similar to those which functioned satisfactorily under the 1947 Act.

Sir Patrick Spens (Kensington S.—C.) wondered whether the promises given by Mr. Watkinson could be validly laid in the compensation regulations unless the wording of the Bill was changed.

Sir Frank Soskice (Sheffield Neepsend—Lab.) asked the Government to give an undertaking to ensure that every change in employment caused would come within the scope of the compensation regulations.

Mr. Alan Lennox-Boyd (Minister of Transport) said the Government intended that where, for example, in the case of the railways, a reorganisation scheme was imposed by statute the people affected would be covered by the compensation regulations. But it would clearly be impracticable for the regulations to cover people who might in future years lose their employment because of a diversion of traffic from rail to road, in consequence of greater competition.

The amendment was, by leave, withdrawn.

Minister's Promise

On the question that the clause stand part of the Bill, Mr. Lennox-Boyd said the Bill did not reproduce safeguards for employees under the Railways and London Passenger Transport Acts, which were in the 1947 Act, because they had been ad-

vised it was not necessary. The rights under those Acts still remained sacrosanct. He believed that as a result of the transfer the same or an ever-growing volume of goods would have to be carried. They were dealing with a growing industry, and he did not think they need be unduly disturbed about employment.

They were pressing on the railways a statutory obligation to decentralise, and he was approaching his talks with the unions with the desire that men who suffered from an act of Government policy should fall into the same categories for compensation as those in road haulage.

The Labour Government had found it impossible to bring out their own regulations for two-and-a-half years. He hoped to get the present regulations out before the disposal began.

Clause 27 was ordered to stand part of the Bill.

Pension Rights

On Clause 26 (Provisions as to pension rights), Mr. Lennox-Boyd accepted three Opposition amendments to make it obligatory for the Minister to make regulations to preserve to the greatest possible extent the pension rights earned before loss of employment.

The amendments were agreed to.

Clause 26, as amended, was ordered to stand part of the Bill.

Members of the Commission

On Clause 24 (Amendments as to general duty and constitution of B.T.C., and so on), Mr. Herbert Morrison (Lewisham S.—Lab.) moved an amendment on the question of the minimum number of full-time Members who would serve on the Commission. He said the Commission would be the general planning, policy-making, and financial authority, with considerable duties, and to supervise the work a full-time Chairman and four full-time Members would be needed.

Mr. Lennox-Boyd said that there was a case for increasing the maximum membership of the Commission as was now proposed in the clause from eight to ten. The Government did not intend there should be only a full-time Chairman, but they thought it would be unwise to introduce a rigid proportion as between full-time and part-time Members until they saw the shape of the railway reorganisation scheme.

The amendment was negatived.

Mr. Ernest Davies (Enfield E.—Lab.) moved a series of amendments to ensure that the Commission remained an adequately representative body to carry out the duties which remained to it. He said that under the amendments the position would revert to that under the 1947 Act. The field from which the Commission was to be drawn seemed limited to those with experience of road and rail transport.

Mr. Lennox-Boyd said that he would give favourable consideration to Mr. Davies's suggestion, which would amalgamate two sections to read: "Officers who between them have had experience in management and organisation of workers in railways and road transport."

The guillotine fell, and Clause 24 was ordered to stand part of the Bill by 245 votes to 235.

On Clause 28 (Amendments as to consultative committees for Scotland and Wales), Sir Frank Soskice moved an amendment to equate the Area Consultative Committees with the Scottish and Welsh committees, and to empower the Minister to give directions to the road hauliers as well as to the Commission.

After debate, Mr. Lennox-Boyd resisted the amendment, and Mr. Herbert Morrison said that the Government had a prejudice against the public authority and public undertakings. Opposition amendments, he complained, had not been called or debated in many cases, because there had not been time and the Committee had not been able adequately to discuss essential issues of high policy.

The guillotine fell, and the amendment was negatived by 263 votes to 244.

Clause 28 and the remaining clauses were ordered to stand part of the Bill.

The Third Schedule (Provisions of the Transport Act, 1947, repealed) was ordered to stand part of the Bill by 260 votes to 239.

This concluded the Committee Stage.

Passenger Fares Increase

Mr. Alan Lennox-Boyd, Minister of Transport, made the following statement before the House rose for the Christmas recess on December 19:

"When I announced in the House on November 18 that I proposed to authorise an increase of 5 per cent. in B.T.C. railway freight, dock, and canal charges as from December 1, I said that the Commission had indicated to me that the whole question of passenger fares would be brought under review. I added that it would be open to the Commission to apply to the Transport Tribunal for an alteration of the existing Passenger Charges Scheme and that the earliest date on which such applications could be made were March 2 next in the case of London and May 1 next in the case of railways outside the London area, these dates being in each case twelve months after the coming into force of the London and Provincial sections of the present Scheme.

"As the Tribunal had on the Commission's application so recently settled a comprehensive Passenger Charges Scheme I had assumed that the Commission would seek authority for any increase in the fares governed by that Scheme by an application for alteration of the Scheme under section 79 of the Transport Act, 1947, which provides for the minimum interval of twelve months.

"I was aware that on that previous occasion the Commission had invoked sections 76 and 77 of the Transport Act and had submitted to the Transport Tribunal an entirely new Charges Scheme revoking the Scheme then in force. These sections do not provide for any minimum interval before a new Charges Scheme may be submitted.

"It was understandable that this procedure should be followed in the case of a new and comprehensive charges scheme, designed to supersede a scheme which had

been submitted in draft as partial and interim. I did not think, however, that this procedure could appropriately be used for seeking authority for alterations which would merely increase the maximum charges and would not alter the scope or principles of an existing scheme.

"I have now, however, been informed by the Commission that it intends to submit very early in the New Year to the Transport Tribunal a new Scheme revoking the existing Scheme and providing for increases in the Commission's fares. I am sorry to have to make a statement like this on the eve of the Recess, but as application may be made before we return I feel the House should be told of it at once."

Public Hearing of Charges Scheme

Mr. James Callaghan (Cardiff S.E.—Lab.) asked first, if there would be a public inquiry at which objectors could appear; second, if the application of the Commission would cover not only standard fares, but also season, cheap day, early morning, and so on; and third, as the Minister had acknowledged that the information he gave previously was incorrect but did not tell them why, if he consulted the B.T.C. before he gave the House to understand that there would be no such application.

Mr. Lennox-Boyd said that there would be an inquiry. The 1947 Act provided for the representatives of users of transport to give evidence before the Tribunal. They must all await submission of the Scheme. He was only giving advance information now because there would have been no opportunity of asking questions until there had been such application. The Commission had no obligation to consult the Minister, and the Minister had no powers over passenger fares. When a Charges Scheme was submitted the powers of the Minister faded out. In the field of freight, the Commission had to come to the Minister first, because there was no Merchandise Charges Scheme. That was why he had to make a statement on November 18. As to the third point raised by Mr. Callaghan, as there had been a recent application for a comprehensive Passenger Charges Scheme, he had taken it for granted that the Commission would use the procedure for alteration and not that for a new Scheme. He was wrong in that. The Commission having approached him as a matter of urgency that they wished to make an application as to freight rates, he granted that at once and made the statement on November 18, though it was politically awkward to do so at the very height of the Transport Bill.

Mr. Ernest Davies (Enfield E.—Lab.) suggested that there was a danger that that House would be faced with a further statement from the Minister if the Transport Bill went through, as a further increase of fares would be inevitable because of the loss of profits to the B.T.C.

Mr. Lennox-Boyd said he hoped that decentralisation would result in greater competition and reduced costs. The increases in a full year over which the B.T.C. had no control, steel, fuel, and new wage awards, amounted to some £32 million, and the Commission had to take steps to meet that increase. As to the Bill prejudicing the Commission, the only part of its activities which was being hived off, road haulage, was not making its proper contribution to central charges.

Iron & Steel Bill

Mr. Harry Crookshank (Leader of the House of Commons) on December 19 informed the House that it had been agreed to complete the Committee stage of the

Iron & Steel Bill in eight-and-a-half, the Report stage in two days, and the Third Reading in half-a-day.

Transport and a National Emergency

Mr. Alan Lennox-Boyd stated on December 15 in answer to a question that plans for operation and, if necessary, control of all forms of inland transport in the event of a nationalised emergency, had been prepared and were kept constantly under review. There was no reason to suppose that these measures would be handicapped

by the proposed dispersal of the B.T.C. road haulage undertaking.

B.I.F. Train Services

Mr. H. R. Mackeson (Secretary for Overseas Trade) stated in a written answer on December 9 to a suggestion for a fast through refreshment-car service between Earls Court and Castle Bromwich and for aeroplane and helicopter services during the period of the British Industries Fair, that he was in touch with the appropriate authorities.

Chester District Poster Competition

To ensure that all passenger stations in the Chester district of the London Midland Region will be as bright and attractive as possible during the Coronation week, and bearing in mind that at that time of year the station gardens will not be looking their best, the District Traffic Superintendent, by arrangement with the Public Relations & Publicity Officer, L.M.R., recently introduced a poster competition in which members of the district staff were invited to submit ideas for designs for display.

It was pointed out that the posters need not necessarily advertise railway facilities, that they might convey loyal greetings, and, with advantage, that a proportion of them might have their wording in Welsh. Entrants were asked to sketch their ideas on foolscap, from which a selection of the best ideas would be chosen for exhibition. The response was gratifying, over sixty entries being received, from which twenty were chosen for further consideration. The selected twenty were then prepared as posters by a skilled signwriter.

On December 15, Mr. George Dow, Regional Public Relations & Publicity Officer, visited Chester and he, together with Mr. F. H. Fisher, the District Traffic Superintendent, made the final choice, resulting in eight designs being accepted for exhibition at stations throughout the district. The winning design was submitted by a porter

signalman at Bettws-y-Coed, second place was secured by the idea of a ticket collector at Llandudno Junction, the third by a Railway Service Representative at Chester, and the fourth by the Stationmaster at Abergele. Four other posters, which were highly commended, were the work of a clerk and a dock porter at Holyhead, the Stationmaster at Chester Northgate, and a booking clerk at Mold.

BRITISH EDITION OF WELDING PUBLICATION.

—Copies of *The Stabilizer*, a bi-monthly magazine for welding operatives and engineers originated 25 years ago by the Lincoln Electric Company in America, are now being printed in Great Britain. Each issue now contains items of British and European interest. Copies are free to all operatives from the Lincoln Electric Co. Ltd., Welwyn Garden City, Herts.

TROLLEY FOR PLATFORM SALES.—A new three-tier trolley known as the Kiosk-Car, introduced by Institution Supplies (Leeds) Limited, is suitable for use as a mobile stall selling cigarettes, sweets, stationery and similar articles on station platforms. The trolley runs on spring-loaded, rubber-tyre castors, and the goods are enclosed by Perspex panels with sliding doors on the service side. The shallow top tier incorporates a cash till, drawer, scales, and a display compartment for cigarettes.



Mr. George Dow, Public Relations & Publicity Officer, L.M.R., and Mr. F. H. Fisher, District Traffic Superintendent, Chester, inspecting winning poster designs

Ministry of Transport Accident Report

Culter, December 3, 1951:
British Railways, Scottish Region

Colonel D. McMullen, Inspecting Officer of Railways, Ministry of Transport, inquired into the accident which occurred at about 8.30 a.m. on December 3, 1951, at Culter, when the 8.11 a.m. passenger train, Aberdeen to Ballater, consisting of three bogie coaches drawn by a class "B12" 4-6-0 tender engine, left under a clear starting signal but entered a siding owing to the points having been wrongly connected up and a detector rendered useless; after travelling about 400 yd., it ran into the buffer stops and became derailed. Two serious mistakes made during track and signal alterations the previous day had not been detected before the lines were reopened to traffic. No one was injured. It was a clear frosty morning. The accompanying diagram shows the lines, signals, etc., essential to an understanding of the case.

For reasons of economy the line was being singled in stages and the first, between Culter and Park, including the closing of

were trying to get it to work when the fireman shouted that they were on the wrong line. He immediately applied the brake, but they struck the buffers. He had not looked out of the cab as he was busy with the pump.

The guard was busy attending to some fallen crates when a lineman in the van told him they were on the wrong line; the driver had applied the brake before he could do so.

A relief signalman was in the box. He knew about the alterations; the new diagram had been placed in position. He tested the new frame and the tablet instrument and found them working correctly. He accepted an up train and the down train concerned in the case, which were to cross at Culter and after both arrived he pulled 13, 16, 25 for the down to leave and cleared starting signal 25. He was surprised to see the train going down the siding but could do nothing.

Two plans had been prepared by the

rectly. He connected the points to stand for the siding with lever normal as he was working to the permanent way plan and had dealt with other points similarly. He did not appreciate that the plan was not intended to show the normal point setting and had not noticed that the signalling plan showed it to be otherwise. He had not studied the detection list that day and agreed that the correct setting could easily be seen from it. He connected traps 15b correctly but did not notice the confliction with 15a. He had thought that 15a should have been rod-coupled with points 13 but did not raise the question.

The coupling of 15a was completed as darkness was falling and he did not wait for them to be tested as the work generally was rather behind schedule. He therefore started other jobs. Passing near the points he heard the inspector instruct an installer to remove the locking plunger blade from the detector, as it was sticking; he did not return to see what had been done. Not

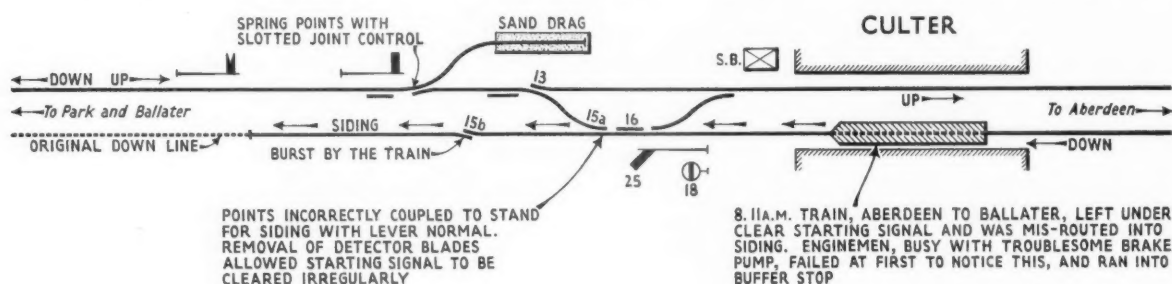


Diagram illustrating circumstances of the accident at Culter, Scottish Region, December 3, 1951

an intermediate box at Drum, was carried out on Sunday, December 2. The down line was closed and the up became a single line, with new facing connection leading from the down line in the station to the new single line. Some 400 yd. of the original down line were retained as a stabling siding and suitably trapped. It will be seen from the diagram that with lever 15 normal, points 15a should have stood for the new single line; they worked with points 15b, forming a trap for the siding. The detector on points 15a should ensure that they are correctly set for the intended direction before the starting or siding signal, as the case may be, can be cleared. This detector is of the three-blade pattern, detecting both switches and the locking plunger. When the work was carried out, points 15a were coupled incorrectly to lie for the siding with the lever normal and the blades in the detector, after being placed in position, were removed.

Evidence

The train concerned was the first in the down direction after the alterations had been made. The driver knew about them. He experienced trouble with the Westinghouse brake pump on the way and at Culter he and the fireman endeavoured to get it right, but had not completely succeeded when he received the token for the section to Park and the starting signal was cleared. He started, hoping the defect would right itself, but the pump stopped again and they

Signal & Telecommunications Engineer for the work. One was headed "proposed permanent way alterations," and also indicated the new positions of signals. The new connection was shown as a crossover, with points 13 and 15a (not numbered) set and spiked for the straight line and the new f.p. locks and bars. It showed points 15a to be locked both ways and distant signals to be arm and light repeated. Issued in October, 1950, this plan was intended for planning purposes only and did not show that either track in the double line was to be put out of use. The other—the signalling—plan was issued in June, 1951; it gave complete details of the signalling work in the first stage. Both were sent to the Area Signal & Telecommunications Assistant at Aberdeen, who passed them to the inspector in charge of the mechanical signalling on the line; he sent them to a chief installer in charge of a construction gang.

The laying of the permanent way had been done and the point rodding, detectors, etc., placed in position beforehand. Work in the box started at about 10 p.m. on the Saturday night and alterations were due to start on the points and signals at 11.30, but the inspector did not reach the station, with installer and gang, until 12.30 a.m.

The chief installer said he and his men did all the work in connection with points 15a and 15b. He connected them together and to the point lever, fitted the detector blades and attached signal wires. The notches had been cut previously and cor-

until after the accident, when he saw that points 15b had been burst, did he realise that he had connected up incorrectly and notice that all three detector blades had been removed. Only then did he discover that the information on the two plans differed.

The installer, who belonged to another gang, said the inspector told him to adjust the locking plunger of points 15a, which were sticking. He found the detector blade to be causing the trouble and tried to adjust that but could not; he was told to remove it. He thought the two remaining blades would cant and might catch in each other, so he disconnected and removed them. He realised that the signal concerned, being now undetected, should be disconnected, but as they were in a hurry to get the job finished took no further action. He thought he told someone about their removal but did not inform the inspector. He laid them on the ground and the rods in the 4 ft., thinking they would be noticed.

When the inspector arrived at 2 p.m. from visiting Park and Drum, the various points, plungers, bars and detectors had been connected up. He tested by pulling the levers. Finding 15 points heavy to pull he went to investigate and found the plunger detector blade out of adjustment. He instructed the installer to remove only the one blade but did not wait to see it done, nor test again. He had left the lever normal and on reaching the points

found them set in the normal position for the single line. He had not put on a lever collar nor left instructions that the lever was not to be moved; afterwards he assumed that someone must have reversed it while he was on the way to the points. It was his practice, after all work was done, to set the frame normal and then inspect the layout when making the final frame test. He did not know whether the Area Assistant had done that and did not ask him.

He had some difficulty in making certain installers understand that points 15a and 13 were not a rod-coupled crossover. He was certain, however, that this chief installer was aware of the correct layout and did not think it necessary to make a special check on the setting of points 15a. It was contrary to rules to remove a detector blade without disconnecting the signal but he thought it safe, as it was his intention to correct the defect early the following morning. He did not inform the Assistant of the circumstance but should have done. He considered that person to be in charge of all work while he was at the station. There was no discussion as to who would do the final testing and he was not in the box when the Assistant was making it, but was present when he signed the train register to the effect that everything was working correctly.

The Area Assistant had arrived in the morning but went to Park and Drum and returned at 3.45 p.m. Work was still in progress. The inspector, he said, told him that 15 points detector was catching, so he instructed him to go there while he pulled the lever about 20 times. The inspector came to the box, said everything was right, and asked him if he would sign the register. Had he been informed that a blade had been removed he would have disconnected signal 25 and arranged for a hand-signalman. It was not necessary for him to visit the work; he did so to see the job done and give any assistance required. The inspector had been booked to it and was definitely in charge.

It was the inspector's responsibility to ensure that all points were coupled correctly and detection provided as planned. He had himself looked at the detectors on walking round after returning and then saw the one at 15 points to be complete. Towards the end the work was rather rushed but it was not on that account that he made the final frame test. He always did that when present and relied on the detectors checking the setting of points. He received two copies of the permanent way plan; he gave one to the inspector, thinking it was understood that this showed only the preliminary work. There was no need for the installer to have a copy, for all the information he required was on the signalling plan. Inspectors were not required to submit any form of safety certificate to him but he had to send one to the Signal & Telecommunications Engineer on completion of the work. In this case that would not be sent until the completion and testing of the second stage.

Inspecting Officer's Conclusions

The initial mistake made by the chief installer in wrongly connecting the points was a very careless one, and could have been avoided had he consulted either the signalling plan or the detection list, both of which he had. His excuse was that he was working from the permanent way plan. He must have known, however, the correct setting of the points, and Colonel McMullen thinks he connected them as he did by force of habit, having done

others in that way, and does not doubt he looked at the permanent way plan, which would not have corrected his misapprehension. A man of his experience should have known that this was not intended to show the setting of the points though it gave some signalling information. He is 51, with 28 years' service and a good record; he has been chief installer for eight years and acted as an inspector for two. His mistake was serious but of relatively small account when the action of others is considered.

The installer, after removing one detector blade on instructions, took out the others. An experienced man of 55 with 31 years' service and a clear record, he has acted also as chief installer for two years. He realised that all detection had been removed and the signal should be disconnected. His action and failure to advise the inspector were quite inexcusable and it was most irregular for the inspector to order a blade to be removed and allow the signal to be worked as usual. Had he carefully checked the work as he should have done he could hardly have failed to notice the mistake in the coupling of the points and complete lack of detection. His excuse was that he expected the Area Assistant to check the layout when making the final frame test, but he had been placed in charge and Colonel McMullen thinks he realised, but would not admit, that the Assistant's presence did not relieve him of any responsibility. Had he thought the Assistant to be in charge it is the more difficult to appreciate why he did not inform him about the removal of the blades. He would not agree that he told him everything was right, but Colonel McMullen sees no reason to doubt the statement was made. He is 48, with 18 years' service; two years as inspector.

The Area Assistant Colonel McMullen considers to have been rather the victim of circumstances. There was no need for him to visit the work; when the inspector reported everything to be right he had every reason to assume that man to have satisfied himself that it was. He said, with justification, that when testing finally he would rely on the detection to disclose any mistake such as was made, had it not been noticed sooner; had all blades not been removed the mistake would have been found. Finding no defect when testing the frame, he is considered to have been in order in signing the register.

Remarks

It is understandable that mistakes can be made, even by experienced installers, especially when work is behind programme and being finished in darkness by men who have been working long hours. The testing and checking, however, should be the more thorough and neglect that allows mistakes such as these to remain undisclosed cannot be excused. The issue of the permanent way plan to the chief installer was, at least to some degree, the cause of his mistake. These plans are prepared for administrative purposes, and if it is necessary to issue them to men such as installers it should be made clear that they are not to be used as working plans.

JAPANESE RAILWAYMEN'S AGREEMENT.—Japanese railway workers have reached agreement on a wage increase. This follows a "work-to-rule" campaign which slowed train services already cut because of the coal miners' strike.

C.T.C. on Rhodesia Railways

Equipment for further 89 miles

The Rhodesia Railways have awarded to the Siemens and General Electric Railway Signal Co. Ltd., an order for the supply of a further section of centralised traffic control extending from Gwelo to Gatooma, a distance of 89 miles forming the middle stretch of the important rail link of 296 miles between Bulawayo and Salisbury.

Equipment has already been supplied by S.G.E. for the first section of this link between Bulawayo and Gwelo, and the system is in traffic operation as far as Somabula. The satisfactory performance and economic savings effected by this first section have resulted in the present extension being authorised.

The new section includes 14 crossing sidings, all of which will be controlled from a control machine located at Gwelo. This machine will mount a miniature diagram of the whole length of track, together with small key switches for operating signals and releasing points at the crossing sidings throughout the section. A brief description of the equipment already installed appeared in our March 21, 1952, issue.

The S.G.E. system of C.T.C. has been introduced with the object of eliminating the delays which occur with the old paper order system, and it is expected that it will be possible to handle a much larger volume of traffic. To have provided such extra train capacity with other methods would have involved the provision of staff at many crossing sidings now unmanned, a very difficult and costly undertaking. The introduction of C.T.C., therefore, not only solves this problem but also provides a more effective and safer method of operation.

The new installation involves the provision of a C.T.C. control machine with its associated field stations, 89 miles of track circuiting, with crossing loops, and approximately 200 running and subsidiary signals. In addition, there will be many hundreds of signalling relays for interlocking and control purposes.

Contracts & Tenders

The Crown Agents for the Colonies have placed a contract with Cravens Railway Carriage & Wagon Co. Ltd. for 90 four-wheel low-side wagons for the Kenya & Uganda Section and 20 four-wheel low-side wagons for the Tanganyika Section, East African Railways & Harbours.

The Siemens and General Electric Railway Signal Co. Ltd. has received an order from the Rhodesia Railways for the supply of centralised traffic control equipment for installation between Gwelo and Gatooma, 89 miles. The company has already supplied equipment for the Bulawayo-Gwelo section, on which the system is in operation between Heany Junction and Somabula, 74 miles.

British Railways, London Midland Region, has announced that the following contracts have been placed:—

Peter Lind & Co. Ltd., London, W.1: construction of reinforced-concrete barrel vault shell roof at Waterloo Dock Goods Station, Liverpool.

British Challenge Glazing Co. Ltd., London, E.15: renewal of roof with patent roof glazing at Liverpool, Park Lane, Cotton Quay.

Arundel & Co. (Louth) Ltd., Louth: cleaning

and painting of Kegworth, Hathern, Syston, Sileby, Barrow-on-Soar and Humberstone Road passenger and goods stations, and signalboxes from Trent to Leicester.

Bagguley & Barker Limited, Nottingham: drainage stabilisation of cutting slope and construction of new retaining wall on the up slow line between 88 miles 1,507 yd. and 88 miles 1,667 yd. on the Rugby to Crewe line.

Shepherd Hill & Co. Ltd., London, W.5: drainage and stabilisation of the cutting slope at Bushey, milepost 15 miles 852 yd., on the Euston-Watford electric line.

Jerram & Co. Ltd., Derby: central heating in the carriage and wagon repair shops at Toton.

John Wilson & Sons (Contractors) Ltd., Birmingham, 21: reconstruction and widening of Bridge No. 5 carrying road A.5 over the railway between Hednesford and Pelsall for the Ministry of Transport.

Hammond & Miles Ltd., Ilford: conversion of stables into a road motor depot at Broad Street Goods Depot, London.

The Special Register Information Service of the Board of Trade has reported a call for tenders issued by the State Railways of Thailand for the supply of 50 bogie high-side wagons and 5 bogie well wagons.

Tenders should reach the Office of the Stores Superintendent, State Railways of Thailand, Bangkok, by 2 p.m. on Wednesday, February 11. A copy of the tender documents is available for inspection at the Board of Trade, Commercial Relations & Exports Department, by representatives of United Kingdom manufacturers.

The United Kingdom Trade Commissioner at Delhi has notified the Board of Trade, Commercial Relations & Exports Department, of a call for tenders issued by the Directorate General of Supplies & Disposals, Government of India, for 100 buffer plungers type C. Tenders should reach the office of the Director General of Supplies & Disposals, Government of India, New Delhi, by 4 p.m., January 14. A copy of the tender documents is available for inspection at the Board of Trade by representatives of interested United Kingdom manufacturers. A further copy of the tender documents is available on loan in order of written application. Reference CRE/42634/52 should be quoted.

The Special Register Information Service of the Board of Trade reports that the United Kingdom Trade Commissioner at Calcutta has been approached by Kristo Dhone Gangooly & Company, of Calcutta, which is anxious to acquire a large supply of insulating pads for use on Indian railways. The firm states that it has been established since 1880 and is a Government and railway contractor, and manufacturer of rivets, bolts, nuts, and machinery parts, and stockists of Tata steel.

The pads required are for fitting between baseplates and metal sleepers to provide insulated running rails for track circuiting and, in addition, to act as cushioning pads to reduce the impact under the sleepers. The bearing pressures under the rail seats are estimated to be in the region of 2,000 lb. per sq. in. for cast-iron sleepers and 900 lb. per sq. in. for steel trough sleepers. The insulating pads must be designed to stand all conditions of weather in India and should be comparatively cheap and durable. The pad sizes are understood to be 6 in. x 6 in. and 6 in. x 12 in. Manufacturers interested should write direct to Kristo Dhone Gangooly & Company, 115, Netaji Subhas Road, Calcutta 1, enclosing, if possible, a sample of the pads offered.

Notes and News

"Machinery Lloyd."—Odhams Press Limited has acquired the whole of the share capital of Continental & Overseas Organisation Limited, the company owning *Machinery Lloyd*. No fundamental changes are contemplated in the conduct of the journal. Mr. Geo. L. Layton will remain Managing Director.

Draughtsman Required.—Applications are invited for the post of draughtsman, with workshops experience, required by a firm of engineers in the East Midlands. See Official Notices on page 27.

Crown Agents for the Colonies.—Applications are invited for the post of senior stock verifier required by the Government of Nigeria for the railway department for one tour of 18 to 24 months in the first instance. See Official Notices on page 27.

Improved Third Class Sleepers on Euston-Scotland Trains.—From January 5 all sleeping car trains between Euston and Scotland (except the 9.10 p.m. from Euston) will be equipped with the new 2-berth third class sleepers in place of the former 4-berth compartments. The new sleepers, fitted with well-sprung mattresses, provide full bedding instead of rugs and pillows. Individual lighting is provided for each berth. There is a wash basin with hot and cold running water in each compartment, and two toilets in each coach. The vehicles were described and illustrated in our November 30, 1951, issue.

Christmas Tree and Carol Service at Euston.—After the former enquiry office in the middle of the Great Hall at Euston was removed, as a result of the opening of the new office described in our December 12 issue, a 30 ft. Christmas Tree was placed in the hall during the Christmas holiday period. The hall was appropriately decorated, and formed a picturesque and seasonal setting for a carol concert given there at the request of the Chief Regional Officer, Mr. J. W. Watkins, by the British Railways (London Midland Region) Operatic & Orchestral Societies. Mr. Watkins, Mrs. Watkins, and other headquarters officers and their wives attended, and the

concert was also enjoyed by many travellers and railway staff at the station. Over 100 toys for children in the Great Ormond Street and Belgrave Hospitals were left on the tree by Christmas travellers.

Engineer Required by Diesel Manufacturers.—Applications are invited for the post of engineer required by a firm of diesel manufacturers in its sales office. See Official Notices on page 27.

Derailment near Verona.—At least eight persons were reported to have been killed when the engine and two coaches of a Milan-Venice train were derailed near Verona on December 23. The section of track was being regained at the time, and it is understood that a rail had not been replaced.

Institution of Locomotive Engineers.—On January 14, at 5.30 p.m., a paper will be read before the Institution of Locomotive Engineers at the Institution of Mechanical Engineers, Storey's Gate, St. James's Park, S.W.1, on "Limitations on Train Performance with Electric Traction," by Mr. A. S. Robertson.

Locomotive & Carriage Institution of Great Britain & Eire.—On January 16, at 7 p.m., in the Board Room, 163, Eversholt Street, N.W.1, a paper will be read by Mr. O. S. Nock, before the Locomotive & Carriage Institution of Great Britain & Eire, on "Running Characteristics of some well-known Modern Locomotives."

British Railways Christmas Traffic.—During the three "travel" days of Christmas (Christmas Eve, Saturday, December 27, and Sunday, December 28) British Railways ran 53,154 passenger trains, including main-line and local services, specially scheduled for holiday traffic. Over 450,000 passengers travelled on 1,409 long-distance trains leaving the principal London termini between Christmas Eve and Sunday, December 28. During Christmas week, 1,998,490 tons of coal were conveyed from deep-mined pits, and opencast sites compared with 1,713,170 tons during Christmas week last year.

Barsi Light Railway.—The Barsi Light Railway Company has received a cable from its agent stating that he has received from the Government of India notice of its intention to exercise the option under the contracts of taking over the railway on January 1, 1954. Twelve months' notice was necessary to exercise the option and under contracts with the Indian Government that Government will pay the company in England in sterling an amount equal to capital expended with its authority. The railway, which was registered in 1895, has £29,680 in 6½ per cent cumulative preference and £730,320 in ordinary stock. The ordinary distribution for the year ended March 31 was 4 per cent, paid in two equal half-yearly instalments.

G.N.R.(I) Pensioners.—Replying to a question in the Northern Ireland House of Parliament, the Minister of Commerce said that he could not undertake to make special provision at public expense for the pensioners of the Great Northern Railway over and above the pensions for which they might be eligible under the national pensions schemes. He understood that many of the pensioners were paid retiring allowances at higher rates than those mentioned. Employees who joined the company about 1895 and retired about 1942,



Christmas tree in the Great Hall at Euston, now cleared of its former central inquiry bureau

OFFICIAL NOTICES

The engagement of persons answering Situations Vacant advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she, or the employment, is excepted from the provisions of the Notification of Vacancies Order, 1952.

EAST MIDLANDS firm of Engineers require a Draughtsman with Workshops experience. Knowledge of railway permanent-way preferably but not essential. Five-day week, superannuation scheme, canteen. Reply stating age, experience, salary, etc., in confidence to Box 701, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

THE "PAGET" LOCOMOTIVE. Hitherto unpublished details of Sir Cecil Paget's heroic experiments. Eight single-acting cylinders with rotary valves. An application of the principles of the Willans central-valve engine to the steam locomotive. By James Clayton, M.B.E., M.I.Mech.E. Reprinted from *The Railway Gazette*, November 2, 1945. Price 2s. Post free 2s. 3d. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

BOUND VOLUMES.—We can arrange for readers' copies to be bound in full cloth at a charge of 25s. per volume, post free. Send your copies to the SUBSCRIPTION DEPARTMENT, Tothill Press Limited, 33, Tothill Street, London, S.W.1.

CROWN AGENTS FOR THE COLONIES
SENIOR STOCK VERIFIER required by the Government of Nigeria for the Railway Department for one tour of 18 to 24 months in the first instance either (i) with prospect of pensionable employment at a commencing salary according to age and experience in the scale £750 rising to £1,315 a year or (ii) on temporary terms at a commencing salary according to age and experience in the scale £307 rising to £1,453 a year with a gratuity up to £37 10s. 6d. for each three months' service. Salary scales shown include expatriation pay. Outfit allowance. Free passages for the officer and his wife and assistance towards the cost of children's passages or their maintenance in this country. Liberal leave on full salary. Candidates must have a thorough practical knowledge of mechanical and electrical machines, tools, plant and instruments used in locomotive, carriage and wagon workshops, running sheds, electrical substations, motor transport and civil engineering workshops. They must also be acquainted with the spares used in the maintenance of locomotives and rolling stock, permanent way, buildings and plant machinery, and have experience of railway stores procedure and general office organization. Candidates now serving with Railway or Docks and Inland Waterways Executives would be eligible for secondment and should apply through their local officers. Other candidates apply at once by letter, stating age, full names in block letters, and full particulars of qualifications and experience, and mentioning this paper to the CROWN AGENTS FOR THE COLONIES, 4, Millbank, London, S.W.1, quoting on letter M.33126.E. The Crown Agents cannot undertake to acknowledge all applications and will communicate only with applicants selected for further consideration.

DIESEL Manufacturers require Engineer for SALES OFFICE. Must be fully conversant with Modern Tendering Practice as applied to Diesel Engines and Driven Equipment. State age, training and appointments held with dates and salary required.—Box 700, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

N.E.R. HISTORY.—Twenty-Five Years of the North Eastern Railway, 1898-1922. By R. Bell, C.B.E., Assistant General Manager, N.E.R. and L.N.E.R. Companies, 1922-1943. Full cloth. Cr. 8vo. 87 pages. 10s. 6d.—*The Railway Gazette*, 33, Tothill Street, London, S.W.1.

TRANSPORT ADMINISTRATION IN TROPICAL DEPENDENCIES. By George V. O. Bulkeley, C.B.E., M.I.Mech.E. With chapters on Finance, Accounting and Statistical Methods. In collaboration with Ernest J. Smith, F.C.I.S., formerly Chief Accountant, Nigerian Government Railway. 190 pages Medium 8vo. Full cloth. Price 20s. By post 20s. 6d. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

RAILWAY MAINTENANCE PROBLEMS. By H. A. Hull (late District Engineer, L.M.S.R.). Valuable information. With much sound advice upon the upkeep of permanent way. Cloth. 8½ in. by 5½ in. 82 pp. Diagrams. 5s. By post 5s. 3d. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

received pensions ranging from only 6s. 8d. a week for porters, to £2 15s. a week for clerical grades. He pressed for an increase sufficient to bring pensions up to a standard more appropriate to the present cost of living. Mr. McCleery said that the amount of the pension was determined, *inter alia*, by the rates of contributions which the company and the employees paid during the period of service. The cost of any increase would apparently fall to be met in full by the company, which had no resources from which it could defray the additional expenditure. Any additional expenses would therefore become a charge on the taxpayer.

Paint and Varnish Depot in Manchester.—Griffiths Brothers & Co. (London) Ltd., specialist in paint, enamel, and insulating varnish has opened a new depot and offices at Armour House, 28, Hyde Road, Ardwick, Manchester 12 (telephone: Ardwick 1142). Full stocks of all the company's paints and varnishes will be held at this new depot and deliveries will be made by the firm's own transport. The company's representatives in the northern counties will use the new depot as their headquarters.

Women in U.S. Transport Industries.—With a view to stimulating further employment of women in transport industries under the jurisdiction of the Defense Transport Administration, the D.T.A. has published Special Manpower Study No. 8, examining the record of women already working and pointing the way towards further use of women in D.T.A. industries. These industries embrace the fields of rail and highway transport inland, water transport, warehousing and stores, and port working. It is estimated that some 17 million women between the ages of 35 and 65 are available for employment on these duties.

Shunters' Strike at Kings Cross Goods Depot.—Shunters at Kings Cross Goods Depot, Eastern Region, were on strike on Monday and Tuesday of this week in protest at the promotion of a West Indian carriage cleaner to shunter. The man concerned is a member of the N.U.R.; he is stated to have been employed as a carriage cleaner before applying for a position at

Kings Cross Depot which entailed promotion, and to have been the only applicant. The 80 strikers decided after a meeting with representatives of their union, the N.U.R., to resume work immediately "in loyalty to the union's policy," which bans discrimination against coloured men. For the strikers it is said that no question of a colour bar arose, and that the men feared that in the event of redundancy involving dismissals men not of United Kingdom origin would retain some of the permanent jobs. Coloured men in fact are employed on many unskilled jobs on the railways and some have been promoted without friction.

Special Train For Transformers.—On November 18, the Eastern Region ran a special train from Cheshunt Station Yard conveying two large transformers weighing over 61 tons each and loaded on two special transformer wagons. The rest of the train consisted of six wagons of con-

tractors' tools and equipment. The transformers, which were built by Asea Electric Limited Company, were for Rye House Power Station, Herts.

British Railways (Southern Region) Lecture & Debating Society.—On January 6, at the Chapter House, St. Thomas' Street, S.E.1, at 5.45 p.m., a lecture will be given by Mr. R. F. Biddle, Docks and Marine Manager, on "Southampton Docks," which will include the film "Ocean Terminal." The chair will be taken at this meeting by the President of the Society, Mr. C. P. Hopkins, Chief Regional Officer.

Helicopters at Charing Cross: Revised Scheme.—L.C.C. objections to the South Bank site as a helicopter terminal have led the Minister of Civil Aviation, Mr. Alan Lennox-Boyd, to consider an alternative site over the junction of Charing Cross



Special train conveying two 61-ton transformers leaving Cheshunt Yard

railway bridge and the Embankment. A preliminary scheme for the Charing Cross site was introduced in the House of Commons by Mr. Norman Dodds, M.P., in May, 1951, since when it has been modified to embody criticisms by the Ministry. The proposed terminal would straddle the railway bridge. It would be borne on reinforced concrete columns. The main platform, about 100 ft. above street level, would have two runways each 300 ft. long \times 150 ft. wide, forming a square 300 ft. \times 30 ft. Several helicopters would be able to load and unload simultaneously, and two lifts would take machines to hangars 30 ft. below for servicing. Mr. Dodds believes that the noise of the helicopters would not cause offence at Charing Cross, because of the elevated platform.

Heavy Coal Carriages on British Railways.—In the 48 hr. ended 6 a.m. on December 22, coal carriages on British Railways were the heaviest for eight months, 406,330 tons being cleared from deep-mined pits and open-cast sites. This made the total for the week 3,168,710 tons. During the week ended December 13, 221,232 tons of iron and steel from the principal steelworks and 289,000 tons of iron ore were conveyed.

Overseas and Foreign Railways Traffic Table.—In consequence of the much reduced number of traffic returns, particularly weekly returns, received from British-owned railway companies overseas, we are no longer publishing these figures in tabular form. In September, 1952, this table represented 51 administrations, whereas by the end of last year the number had fallen to 15. The fortnightly editorial commentary on traffic returns from overseas will, however, continue to be published.

Forthcoming Meetings

- January 5 (Mon.).—Institute of Transport, Sussex Group, at the Royal Pavilion, Brighton, at 6.30 p.m. "Legal aspect of Transport," by Mr. G. S. M. Birch, Senior Assistant Solicitor, British Transport Commission.
- January 5 (Mon.).—The Historical Model Railway Society, at 32, Russell Road, W.14, at 7 p.m. "The Railways of Anglia—Hibernia and Wanglia," by Mr. C. J. Barnard.
- January 6 (Tue.).—Railway Service Christian Union, in the London Midland Region Clerical Dining Club Hall, Cardington Street, Euston, N.W.1, at 6.15 p.m. New Year's Rally. Speaker: Mr. J. Taylor Thompson.
- January 6 (Tue.).—British Railways (Southern Region) Lecture & Debating Society, at the Chapter House, St. Thomas' Street, S.E.1, at 5.45 p.m. "Southampton Docks," by Mr. R. P. Biddle.
- January 6 (Tue.).—Permanent Way Institution (Leeds Section), in Room 602, District Engineer's Office, City Station, Leeds, at 7 p.m. "The Work of the Hallade Section," by Mr. L. P. G. Straughan.
- January 6 (Tue.).—South Wales & Monmouthshire Railways and Docks Lecture & Debating Society, at the Angel Hotel, Westgate Street, Cardiff, at 6.30 p.m. "Scotland and Wales—Likenesses and Differences in Transport Requirements," by Mr. T. H. Hollingsworth.
- January 13 (Tue.).—Institution of the Railway Signal Engineers, at the Institu-

tion of Electrical Engineers, Savoy Place, Victoria Embankment, W.C.2, at 6 p.m. "Inductive Interference from Electric Power Lines and Traction Circuits," by Mr. D. R. Turner.

January 14 (Wed.).—Institution of Locomotive Engineers, at the Institution of Mechanical Engineers, Storey's Gate, St. James's Park, S.W.1, at 5.30 p.m. "Limitations on Train Performance with Electric Traction," by Mr. A. S. Robertson.

January 14 (Wed.).—Railway Students' Association at the London School of Economics & Political Science, Houghton Street, Aldwych, W.C.2, at 6.15 p.m. Exhibition of Transport Films by the British Transport Commission.

January 15 (Thur.).—Diesel Engine Users'

Association, at Caxton Hall, Westminster, S.W.1, at 2.30 p.m. "Small Air-cooled Diesel Engines—Development and Applications," by Mr. C. F. Nossiter.

January 15 (Thur.).—British Railways (Western Region) London Lecture & Debating Society, in the Headquarters Staff Dining Club, Bishop's Bridge Road, Paddington, at 5.45 p.m. Railway Quiz. Questionmaster: Mr. H. G. Bowles.

January 16 (Fri.).—Locomotive & Carriage Institution of Great Britain & Eire, in the Board Room, Railway Clearing House, 163, Eversholt Street, N.1, at 7 p.m. "Running Characteristics of some well known Modern Locomotives," by Mr. O. S. Nock.

Railway Stock Market

Stock markets have made a quiet start to the New Year, though most sections were inclined to strengthen because very little selling has been in evidence. Buyers remained cautious, partly because it is assumed that for the present attention will centre mainly on the Anglo-Iranian Oil £20,000,000 issue of 5 per cent debentures, lists for which open and close on January 6. In the City it is expected that there will be a big demand for these new debentures, which are offered at £98½, and when dealings start may show a premium of around £1 10s.

Unless there is a big rush of new issues, stock markets generally may show an improving tendency over the next few months in the hope that the Budget may bring some reduction in taxation, though it is realised that this will hardly be possible unless the Government finds ways and means of effecting important economies. If there is growing confidence that some reduction in taxation is possible, it may be that many important new capital issues will be left until after the Budget. Among industrials, the tendency is to favour shares of engineering companies, because it is realised that engineering and allied products are likely to play an increasingly important part in the export drive.

Firmness has been maintained by most foreign railway stocks. United of Havana 5 per cent 1906 debentures were 18½, the 4½ per cent Cuban debentures 41, the 4½ per cent Western debentures 20½ and Havana Terminal debentures 69. The market view is that current levels of these stocks are reasonable, bearing in mind the capital reorganisation and its effect on individual stocks, and the assumption that any take-over offer from Cuba will be fair and equitable.

Costa Rica ordinary stock has changed hands up to 9½ and the 6½ per cent first debentures up to 58. Nyasaland Railways £1 shares have again changed hands around 4s. 4½d. and the 3½ per cent first debentures marked 71.

Manila Railway issued continued active, but failed to keep best prices. The statements at the annual meeting indicated that there has been no important development, though the Railroad Company has asked the directors of the Railway Company whether they would approve a sale of assets in Manila. The market view is that there is likely to be a sale of hotel assets by the Railroad company, followed by payment of arrears on the Railroad bonds and the clearing of interest arrears on the Railway Company debentures. The latter therefore may have the most interesting

possibilities of any foreign railway security. At the time of going to press the "A" debentures are 83, the "B" debentures 75, while the £1 preference shares have changed hands actively around 9s. 9d. and the 1s. ordinary shares around 4s. 4½d.

Guayaquil & Quito 5 per cent first bonds have transferred up to 37½. Dorada Railway ordinary stock has been steadier with business at 59.

There was a little buying of old Russian railway bonds on talk that pre-1918 Russian assets in Britain might be sold and distributed to creditors; but the value of these assets is believed to be inadequate to make any pay-out of this kind.

Antofagasta ordinary and preference stocks have changed hands around 10½ and 51½ respectively. Nitrate Rails shares showed steadiness at 20s. 6d. and Taltal shares were 15s., while San Paulo 6s. 8d. units strengthened to 7s. 3d.

Canadian Pacific at \$61½ failed to hold best levels. White Pass & Yukon no par value shares at \$18½ also lost part of an earlier gain, and the convertible debentures were £66½.

Barsi Light Railway stock has been active up to 121 after the Indian Government's formal notice of its intention to acquire the railway.

Among road transport shares, West Riding have strengthened to 33s. 6d., South-down were 82s. 6d. and Lancashire Transport 40s. Maidstone & District changed hands at 50s. 9d. B.E.T. deferred stock has held steady at £430.

Engineering and kindred shares attracted rather more attention because of export trade expansion hopes. Moreover, it is pointed out that in most cases there seem good prospects of dividends being maintained, and in this basis, yields at current prices are not unattractive. Guest Keen have strengthened to 50s. 3d. at the time of going to press and Tube Investments to 61s., while Ruston & Hornsby were 39s. 3d., Vickers 44s. and John Brown 45s. T. W. Ward were 71s. 3d. and Renold & Coventry Chain 38s. Babcock & Wilcox have been firm at 70s. 9d.

A good feature among shares of locomotive builders and engineers has been a further rise in Beyer Peacock to 32s. 6d. on higher dividend talk. Elsewhere, Hurst Nelson were 43s. 6d. at Glasgow, and North British Locomotive 14s. Birmingham Carriage were 31s. 10½d. Central Wagon changed hands around 58s. 6d. In other directions, Vulcan Foundry were 22s. 9d., Gloucester Wagon, 10s. shares 11s. 9d., Charles Roberts 5s. shares 20s. 9d. and Wagon Repairs 5s. shares 13s.